



City of Colorado Springs



Prehospital Practice Guidelines

Colorado Springs Fire Department and AMR

Revised: 2/11/2019



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Reviewed by

The following guidelines were reviewed by members of the Colorado Springs Fire Department (CSFD) Medical Division as well as members from the American Medical Response (AMR) Clinical Education Specialist (CES) department.

Approved by

The following guidelines were approved by the Colorado Springs Medical Direction Team consisting of Eric Stein Bronsky, MD, FACEP, Brett Banks, DO, Timothy R Hurtado, DO, FACEP, Dave Hakkarinen, MD, FACEP, and Sean Donahue, DO, FAAFP, FACEP as well as members of the El Paso County Emergency Care Committee.

Special Thanks

The Medical Director group would like to thank all those involved in developing, reviewing, and editing the Prehospital Practice Guidelines. The immense work, organization, and time devoted to the project reflects the passion and dedication each and every one of you have for cultivating the community in which you serve

Introduction

Description

The following guidelines have been developed and approved by the Colorado Springs Fire Department and American Medical Response (AMR) in conjunction with a working group representing SCRETAC, SECRETAC and P2PRETAC. The guidelines delineate the expected standard of care and acts allowed for EMT, EMT-IV, AEMT, EMT-I and paramedic providers functioning under our medical direction.

Colorado EMS Providers working in the prehospital setting are expected to adhere to the scope of practice established in Colorado Department of Public Health and Environment, [6 CCR 1015-3 CHAPTER TWO - RULES PERTAINING TO EMS PRACTICE AND MEDICAL DIRECTOR OVERSIGHT](#). The working group utilizes these rules to establish guidelines to be used as guidelines for operation during prehospital EMS calls. They are also intended to serve as guidelines to ensure that all personnel falling under our medical direction are trained in proper prehospital patient care.

Understanding communication challenges faced by many of southern Colorado's EMS providers, medical director(s) may establish the circumstances and methods by which an EMS provider obtains authorization to perform any medical act, skill or medication.

Where evidence-based practice has been available, the medical director group has diligently evaluated the research available and drafted guidelines that will assist EMS providers in providing the best possible patient care. Where evidence is lacking, we have relied on best practices, expert advice, and consensus to guide the development of the guideline or procedure. Moving forward, these guidelines are to be reviewed on a six month basis and updated when necessary to reflect advances in the art and science pertaining to the care of acutely ill and injured patients.

No guideline can account for every clinical scenario encountered as EMS is performed in a stressful environment with time-critical decisions. No specific patient care matrix can be developed that will cover every type of injury, illness, and complicating circumstance that prehospital providers will encounter while providing on-scene care. From time to time, it is expected that circumstances will arise that are not covered within these guidelines. In such instances, providers should function within their scope of practice and use all available resources (including On-Line Medical Consultation) to ensure the best outcome supported by documented clinical reasoning and sound judgment.

These guidelines represent a significant change in formatting from previous versions. The hope is that by significantly streamlining them, these guidelines will be much more "user-friendly" for every level of provider covered under our medical direction. The guidelines are now presented in a format intended to reflect real-time decision making processes. Although these new guidelines imply a specific sequence of actions and/or procedures, it may often be necessary to provide care out of sequence from that described, if dictated by clinical circumstances. Remember that there is no substitute for sound clinical judgment. We encourage providers to search for more in-depth knowledge and understanding of patient management principles by accessing up-to-date textbooks, literature, and research materials and to seek out continuing education opportunities related to the practice of prehospital medicine.

By moving the guidelines to an electronic format, it will be possible to immediately link directly to a referenced guideline, procedure and/or medication by clicking on a hyperlink, which is in blue and underlined. The guidelines can still be printed for reference guides; they just won't be quite as easy to navigate, especially during a real-time, decision-making situation.

Thanks to everyone who has provided assistance in guideline development and review. Any project this complex and detailed is prone to errors. Please review these guidelines carefully and route any potential errors, unclear directions, or suggestions for improvement to your agency's EMS Officer or medical director.

Introduction

Finally, and most importantly, we thank every one of you for your dedication and commitment every day to providing the best, most compassionate prehospital medical care to the citizens of our respective communities.

Guideline Key

For guidelines using an algorithm format, acts allowed for each provider certification level are identified by borders around the appropriate instruction boxes using the following color key:

EMT	EMT-IV	Paramedic
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Individual medication and procedure guidelines include a color-coded box at the top, indicating whether a specific provider level is allowed to administer the medication, if the medication can be administered as a standing order (**SO**), requires base contact for a verbal order (**VO**), and requirements for any repeat doses. Anywhere there is a “**NO**” it is not allowed.

Provider Level	1 st Dose	Repeat Dose
EMT	NO	NO
EMT-IV	NO	NO
Paramedic	SO	SO

Medications or procedures that are only allowed to be performed by agencies with a current State-approved waiver to the acts allowed are clearly marked and indicated with an asterisk* and outlined or written in **BROWN**.

Medications and procedures will be **CAPITIALIZED**, *italicized*, underlined and in written in **BLUE** to signify a hyperlink.

Teaching points deemed sufficiently important to be included in algorithm-based guidelines are located in grey-filled boxes.

Pediatric Guidelines

For the purposes of these guidelines, pediatric patient's are defined as birth until patients weight based calculations equal the adult dose, see [GENERAL PEDIATRIC OVERVIEW](#). Pediatric specific information will be noted by **PURPLE TEXT**.

Guideline Education and Training

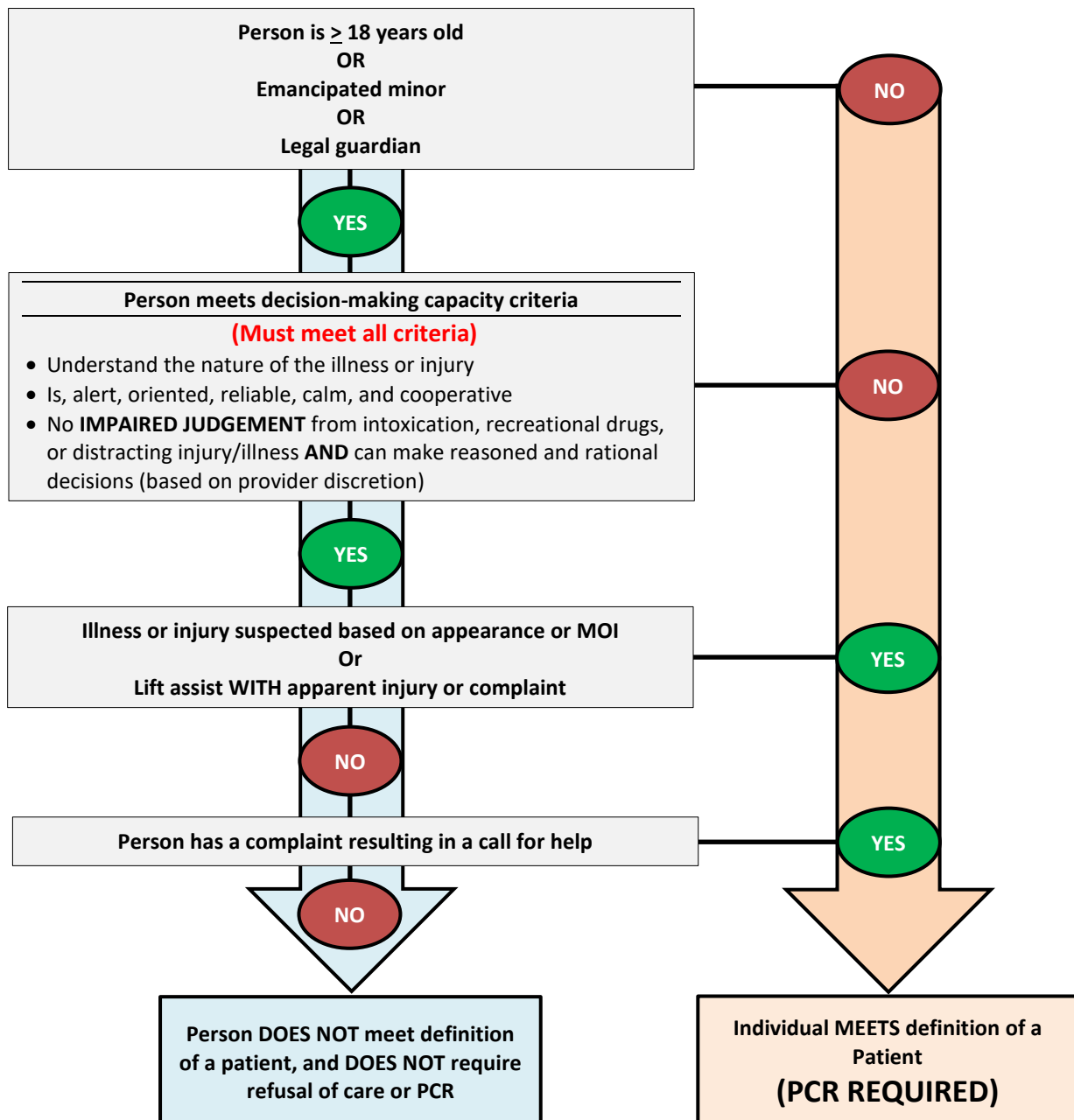
The curriculum for initial EMS provider training may not cover some of the treatments, procedures, and medications included in these guidelines. The acts allowed by Colorado's Chapter Two Rules are more extensive than those required to be taught using the *National EMS Scope of Practice* model.

Therefore, it is the responsibility of all EMS agencies and their Medical Directors to ensure that initial training, verification of competence, and maintenance of the skills falling outside traditional EMS education are documented for all agency providers. This may be of additional importance when training and orienting new providers, providers moving to a higher level of certification, and providers new to Colorado, prior to allowing them to practice independently.

Patient Determination

Description

- This guideline is intended to refer to individual patient contacts
- When in doubt as to whether individual is a “patient”, err on the side of caution and perform a full assessment as well as documentation.
- No guideline can anticipate every scenario and providers should use best judgment



Consent



Decision Making Capacity

- a. A person has appropriate decision making capacity if he or she;
 - Is alert, oriented, reliable, calm, and cooperative **AND**
 - Is able to understand the nature and consequences of his or her illness or injury **AND**
 - Is able to understand the nature and consequences of the proposed or refused treatment **AND**
 - No **IMPAIRED JUDGEMENT** from intoxication, recreational drugs, or distracting injury/illness **AND** can make reasoned and rational decisions (based on provider discretion).
- b. The patient should be assessed to determine that they are oriented, have an understanding of what happened, what may possibly happen if treated or not treated, and have a plan of action –such as how to get home from scene if refusing treatment.
- c. If the patient does not have appropriate decision making capacity under these guidelines, consent should be obtained from another responsible party
 - Must also have appropriate decision making capacity and be legally "of age", spouse, adult son or daughter, parent, adult brother or sister, or legal guardian.
- d. If the patient does not have appropriate mental capacity and none of the above persons can be reached, the person should be treated and transported to a medical facility.
 - It is preferable to enlist support and agreement in this course of action from law enforcement.

Consent

- a. A patient has the right to consent to or to refuse treatment. If the patient does not have decision making capacity, a relative or guardian has this same right (see below).
 - Age of consent varies with different states. In general, the patient must be over 18 years of age or between 15 and 18 years and "emancipated," (i.e., living apart from his or her parents).
 - Emancipated Juvenile per Title 19 section 19-2-511 of the Colorado Revised Statutes is anyone ≥ 15 and < 18 years of age who has, with the real or apparent consent of the juvenile's parents, demonstrated independence from the juvenile's parents matters of care, custody, and earnings. The term may include, but shall not be limited to, any such juvenile who has the sole responsibility for the juvenile's own support, who is married, or who is in the military.
- b. Consent is "**implied**" when the patient is unable to consent to treatment due to age, mental status, or medical condition **AND** no responsible party is available to grant that consent.
- c. In no event should legal consent procedures be allowed to delay immediately required treatment.
 - If the time delay to obtain lawful consent from an authorized person would present a serious risk of death or serious impairment of health, or would prolong severe pain or suffering of the patient, treatment may be undertaken to avoid that risk.
- d. If the patient is a minor, consent should be from a competent natural parent, adopted parent, or legal guardian.
- e. Involuntary Consent: a person other than the patient in rare circumstances may authorize consent.
 - This may include a court order (guardianship), authorization by a law enforcement officer for prisoners in custody or detention, or for persons under a mental health hold or commitment who are a danger to themselves or others or are gravely disabled.

Special Considerations

- a. It is preferred to render care in "good faith" which may help reduce the risk of legal consequence for failure to treat and/or negligence
 - Do not let fear of legal consequences prevent rendering care
- b. The best defense against any legal question of consent, decision making capacity, and the need for care, is a good prehospital care report.
 - A written account of the patient and care rendered will be invaluable if legal questions are raised months later and will convey competence and adherence to standards of care

Patient Refusal

Description

- a. Any patient who has **decision-making capacity** may refuse treatment, examination or transport. This guideline is designed to assist the prehospital provider manage patients who refuse care and/or treatment.
- b. The patient **MUST**:
 - Alert, oriented, reliable, calm, and cooperative
 - Understand the nature and consequences of his or her illness or injury
 - Understand the nature and consequences of the proposed or refused treatment
 - Have no **IMPAIRED JUDGEMENT** from intoxication, recreational drugs, or distracting injury/illness **AND** can make reasoned and rational decisions (based on provider discretion).
 - Voluntarily refuse treatment or transport
- c. The EMS personnel on scene are responsible for:
 - Reasonable assessment of the patient to determine if there is an injury, illness, or reason for transport and treatment. They should consider the nature of the incident, potential mechanism, obvious actions of the patient, as well as their verbal statements.
 - Making sure the refusal is informed and voluntary

Refusal Qualifications

- a. The role of medical control contact is to assist in determining or verifying the patient's ability or inability to make medical treatment decisions and assist when transport should be done. It is imperative that an accurate and concise report be given for the physician to be able to provide situational advice.
- b. Medical Control **DOES NOT** need to be made (standing order) in cases where **ALL** of the following are present:
 - Patient is one of the following:
 - i. Is ≥ 18 years of age **or**
 - ii. Emancipated minor **or**
 - iii. Minor with parent-guardian on-scene or available via phone
 - **NO** life threatening/debilitating injuries or acute medical illness
 - **NO** reasonable expectation of patient condition worsening
- c. Consider Medical Control contact **IF** further guidance is needed in situations such as, but not limited to the following:
 - Minor(s) is/are **NOT** left in the custody of the parents or guardians
 - All EMS personnel are **NOT** in agreement or have doubts regarding the patient's ability to refuse
 - Life threatening or debilitating injuries present
 - Acute medical illness present (with exception of resolved hypoglycemia with known diabetic etiology)
 - Potential life threatening medical illness present

Documentation

- a. All patients that are assessed **REQUIRE** at least one (**1**) set of vital signs as well as a patient care report and the Patient Refusal Disposition Form.
- b. Completed Refusal Disposition Form distribution
 - White copy given to the Primary Agency taking refusal and scanned into ePCR system.
 - Yellow copy given to Secondary Agency (other EMS/Fire) on scene
 - Pink copy given to the patient
 - Scan original into ePCR system
- c. Refer to local standard operating procedures or guidelines for agency specific documentation guidelines
- d. If there is no signature, document reason in the narrative (i.e. patient refuses to sign etc.)

Individual Protocols

- a. If the patient has a CARES initiated individual protocol, no patient refusal is needed

General Assessment/Care

Description

- a. All patients will require a minimum amount of supportive care and assessment; while some will require a more advanced assessment and care. This guideline is designed to lay out the minimum requirements for BLS and ALS care with some situational specifics.

Assessment

- a. A complete patient assessment is critical for identifying injuries or illness. It helps to create a working diagnosis that will guide treatment decisions by the healthcare provider. It involves five steps: scene evaluation, primary assessment, medical interview, secondary assessment, and reassessment.

Vital Signs

- a. In most medical settings, the standard vital signs are as follow: pulse rate, SpO₂, respiratory rate, blood pressure, and body temperature/condition. In some instances, along with base vital signs, patient assessment can be expanded to evaluate EtCO₂, blood glucose, EKG (including 12 lead when clinically indicated), lung sounds, Glasgow Coma Scale (when clinically indicated), capillary refill, and/or pupils. The EMS provider is responsible for recognizing when to expand the needed vital signs to help ensure a comprehensive assessment.
 - If time allows, acquire multiple sets of vitals to identify trends
 - Unstable patients **SHOULD** have vital signs assessed every 5 minutes
- b. Adult Vital Signs: Normal Ranges
 - Normal vital sign ranges for the average healthy adult while resting are:
 - Blood pressure: 90/60 mm/Hg to 120/80 mm/Hg
 - Breathing: 12 to 18 breaths per minute
 - Pulse: 60 to 100 beats per minute
 - Temperature: 97.8°F to 99.1°F (36.5°C to 37.3°C)/average 98.6°F (37°C)
- c. Pediatric Vital Signs: Normal Range, see [GENERAL PEDIATRIC OVERVIEW](#)

General Supportive Care

- a. Basic Life Support
 - Oxygen therapy
 - Maintain patent airway and SpO₂ Sat ≥ 90% ≤ 98%
 - EtCO₂ monitoring, if clinically indicated
 - Monitor vital signs
 - Splinting/wound care if clinically indicated
 - Vascular access (IV/IO) if clinically indicated
 - Venous sampling (blood draw), if clinically indicated
 - Transport to the **MOST** appropriate facility
- b. Advanced Life Support
 - All of the BLS Supportive care listed above
 - Cardiac monitoring when clinically indicated
 - 12-Lead EKG assessment when clinically indicated including serial EKGs and post arrest evaluation
 - Antiemetic, if clinically indicated
 - Pain management, if clinically indicated

General Pediatric Overview

Description

- This guideline is designed to help the prehospital provider understand nuances of the pediatric patient
- Pediatric patients are defined as birth until patients' weight based calculations equal the adult dose
 - Benzodiazapines are an exception to the above statement

Medical Treatment Age Ranges

- Age ranges will differ for transport as well as RSI refer to specific guideline
 - For specific facility, see [DESTINATION GUIDELINE](#)
 - For consent, see [CONSENT GUIDELINE](#)
 - For RSI, see [WAIVER GUIDELINE](#)
 - For surgical cricothyrotomy, see [AIRWAY PROCEDURES GUIDELINE](#)

Normal Pediatric Vital Sign Ranges

Pediatric Age Group	Blood Glucose	Respiratory Rate	Heart Rate	Systolic BP	Systolic Hypotension	Weight in lbs
The below values are meant to guidelines and can vary slightly from other pediatric reference tools						
Neonate (<28 days)	40 to 99	30 to 53	100 to 205	67 to 84	<60	4.5 to 7
Infant (1-12 months)	127 +/-24	30 to 53	100 to 190	72 to 104	<70	9 to 22
Toddler (1-2 years)	137 +/-24	22 to 37	98 to 140	86 to 106	<70 + (age in years x2)	22 to 31
Preschooler (3-5 years)	128 +/-24	20 to 28	80 to 120	89 to 112	<70 + (age in years x2)	31 to 40
School Age (6-11 years)	90 to 180	18 to 25	75 to 118	97 to 115	<70 + (age in years x2)	41 to 92
Adolescent (12 to 15 years)	90 to 130	12 to 20	60 to 100	110 to 131	<90	>110
Normal pediatric SpO2 values have not yet been decisively recognized and are lower in the immediate newborn period. Normal levels are stable with age. In general, a SpO2 of <92% should be a cause of concern and may be suggestive for a respiratory disease or cyanotic heart disease.						
Temperature ranges do not vary with age. Axillary, tympanic and temporal temps for screening (less accurate). The temperature to be considered a fever is pediatric patients is 100.4 F						
Reference: Chris Novak and Peter Gill for http://www.pedsccases.com/						

Brief Resolved Unexplained Event (BRUE) formerly known as Apparent Life Threatening Event (ALTE)

- An infant < 1 year of age with episode frightening to the observer characterized cyanosis or pale complexion; absent, decreased, or irregular breathing; marked change in muscle tone (hyper- or hypotonia); or altered responsiveness but resolved.
- BRUE is diagnosed only when there is no explanation for a qualifying event after conducting an appropriate history and physical examination
 - Any child with an BRUE **SHOULD** be transported to ED for evaluation, monitor vital signs en route
- Make sure to document the following:
 - Document observer's impression of the infant's color, respirations and muscle tone
 - Was the child apneic, or cyanotic or limp during event?
 - Was there seizure-like activity noted?
 - Was any resuscitation attempted or required, or did event resolve spontaneously?
 - How long did the event last?

Special Considerations

- For pediatrics, reference Pediatric Field Guide, Broselow Tape, Handtevy Guide, or approved apps
- Airways are smaller, softer, and easier to obstruct or collapse
- Respiratory reserve is small. Minor insults such as improper positioning, emesis, stomach filled with air, or airway narrowing can lead to major problems.
- Circulatory reserve is also small. The loss of one unit of blood is sufficient to account for severe shock or death in an infant. Conversely, 500 mL of unnecessary fluid can result in acute pulmonary edema.
- Vital signs and level of consciousness are difficult to assess. History, a high index of suspicion, and "soft signs" can be critical. Listen to the parents. They know when changes have occurred, even if they have difficulty expressing what has changed.

Destination Guidelines



Description

- a. This guideline is designed to assist the prehospital provider with the proper patient transport destination
- b. Destination choices should be based on the following:
 - Patient's request
 - Request by family, primary care physician, or caretaker
 - Nature and/or severity of the patient's condition
 - Proximity to hospital
 - Specialty care provided by a particular facility
 - If the patient exceeds EMS capabilities for stabilization, you may transport to **ANY** emergency department regardless of hospital destination level or capabilities.
- c. If the patient has no hospital preference, transport them to the closest hospital. The destination decision **MUST** be documented in the destination box of the PCR and include the reason. (Closest - no preference, patient request, family request, staff request, trauma center, burn center; hospital divert, triage, paramedic divert).
- d. When necessary, responsibility for determining patient destination lies with the on-scene medical control, **EXCEPT** in the following situations:
 - In multi-casualty incidents, the destination responsibility lies with the Medical Supervisor on scene, or, if appointed, the Transportation Unit Leader or Group Supervisor.
 - Police may determine hospital destination for individuals in custody or under arrest if not seriously ill or injured. In serious or critical situations, patients will be transported to the most appropriate facility.
 - Trauma patients meeting the criteria for transport to a trauma center **MUST** be taken to an appropriate trauma center designated pursuant to the Statewide Trauma Care System Act.
- e. Trauma Destination guidelines may be overridden for patients in **EXTREMIS** who are **NOT** expected to survive to the appropriate trauma center. Examples include inability to secure or maintain an appropriate airway, loss of pulses or blood pressure en route, etc.
- f. When a hospital is on divert, the patient **SHOULD** be taken to the next most appropriate hospital.
 - If **ALL** hospitals are on divert, facilities are then required to accept patient as if they are not on divert
 - The following are appropriate reasons to override ED Divert status
 - i. Cardiopulmonary arrest
 - ii. Imminent cardiopulmonary arrest
 - iii. Unmanageable airway emergencies
 - iv. Unstable trauma and or burn patients
 - v. Patients meeting "Cardiac Alert" criteria (participating hospitals)
 - vi. Patients meeting "Stroke Alert" criteria (participating hospitals)
 - vii. Imminent breach delivery

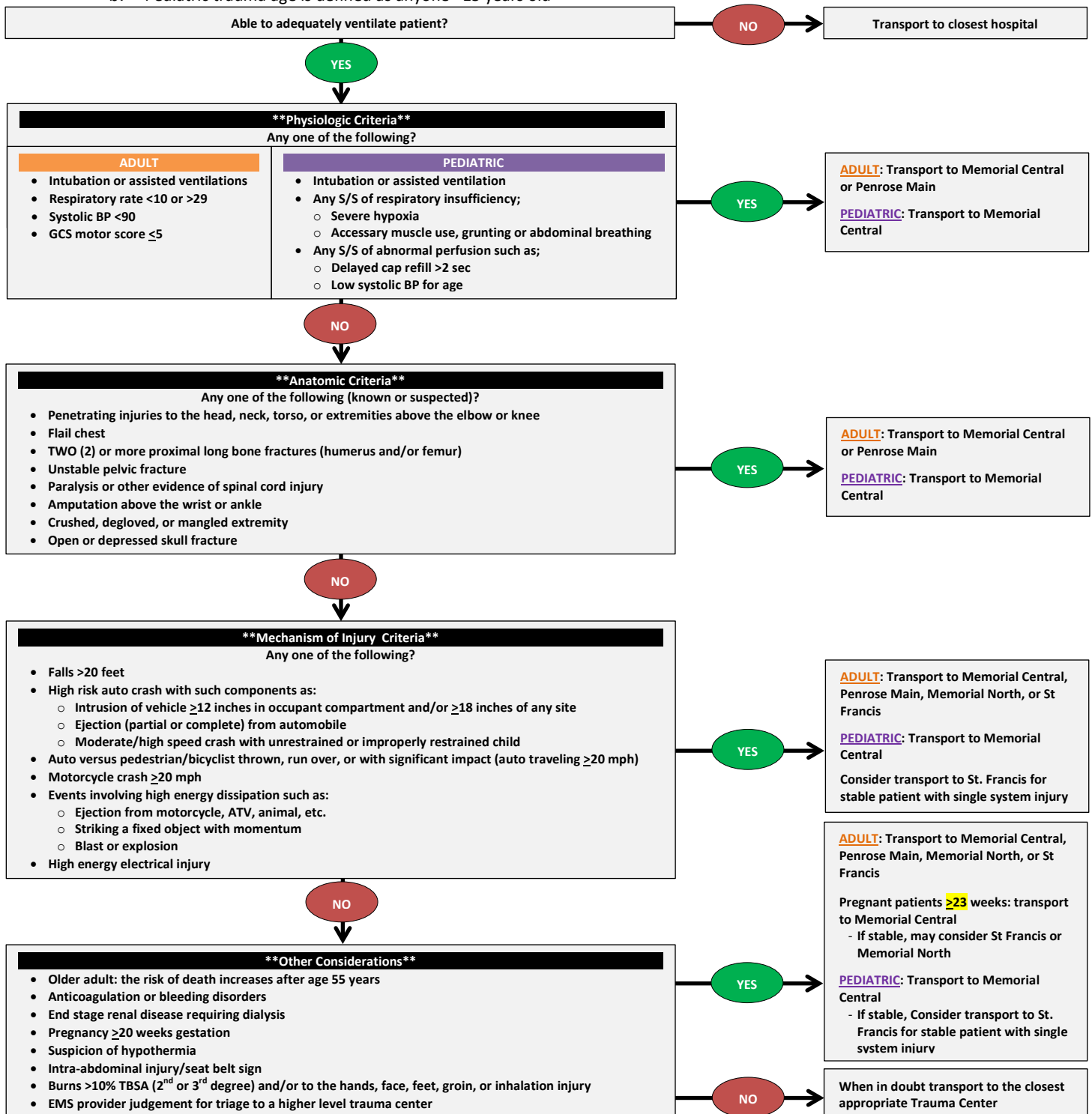
Specific Destination Guidelines

Condition	Penrose Hospital	Memorial Hospital (Central)	St Francis Medical Center	Memorial Hospital (North)	Grandview Hospital
Critical Illness (Adult)	YES	YES	YES	YES	YES
General Illness (Adult)	YES	YES	YES	YES	YES
Critical Illness (Pediatric)	NO	YES	NO	NO	NO
General Illness (Pediatric)	YES	YES	YES	YES	YES
STEMI	YES	YES	YES	YES	NO
CVA: CSTAT < 2	YES	YES	YES	YES	YES
CVA CSTAT ≥ 2	YES	YES	NO	NO	NO
Behavioral/ETOH	YES	YES	YES	YES	YES
SANE (sexual assault)	NO	YES	NO	YES Call Prior to Transport	NO
OB <23 weeks	YES	YES	YES	YES	YES
OB ≥23 weeks	NO	YES	YES	YES	NO
Patients with military DOD ID cards and with nonlife-threatening and/or psychiatric conditions SHOULD be considered for transport to Evans Army Community Hospital on Fort Carson. Contact Evans Medical Control ER at 719-526-7526					

Destination Guidelines

Trauma Triage Decision Scheme

- The below guideline is designed off of specific Colorado State criteria
- Pediatric trauma age is defined as anyone <15 years old



Death in the Field

Description

- a. This guideline is to assist the prehospital provider in making resuscitation decisions. It applies to patients of all ages, including victims of SIDS. It cannot address all possible contingencies therefore; the provider should, when in doubt, attempt resuscitation.
 - Once advanced life support has been initiated, care should **NOT** be terminated **EXCEPT** as outlined in these guidelines.

Death in the Field Indications

- a. An obvious death in the field is a standing order as long as the below criteria is met.
- b. Determination of death in the field (without initiation of resuscitation) **SHOULD** include the following instances;
 - Patient is unresponsive, pulseless, apneic, **AND**
 - i. Decapitation, **or**
 - ii. Decomposition, **or**
 - iii. Rigor mortis or dependent lividity with warm air temperature, **or**
 - iv. Down time ≥ 15 minutes as related by an apparently reliable source, **or**
 - v. Any advanced directive **or**
 - Physician orders as specified on the Colorado Medical Orders for Scope of Treatment (MOST) form: "No CPR. Do Not Resuscitate/DNR/Allow Natural Death", present with the patient
 - vi. Open cranium with exposed brain matter, **or**
 - vii. Penetrating trauma to the neck or torso that is incompatible with life, **or**
 - viii. 3rd degree burns $\geq 90\%$ BSA (incineration) **or**
 - ix. Multiple casualty situations where system resources are required for stabilization of viable patients.

Termination of Resuscitation Indications

- a. Consider termination after no reversible causes have been identified if **ONE** of the following criteria is met:
 - ALS Providers
 - i. The patient is in asystole or PEA
 - ii. EtCO₂ is <10 after 20 minutes of ALS care **AND** there is no return of spontaneous circulation
 - This is **NOT** intended to change the course of treatment once transport has been initiated.
 - iii. It is not recommended to transport patients to a facility without a pulse
 - BLS Providers:
 - i. No ROSC despite "no shock advised" on 3 sequential AED analysis
- ii. Trauma (all levels)
 - i. No ROSC following appropriate interventions, which may include opening the airway, bag-valve-mask ventilation, advanced airway, needle decompression, fluid therapy, and/or pelvic binding as clinically indicated.

Death in the Field

Special Considerations

- a. The following patients found pulseless and apneic warrant resuscitation efforts beyond 20 minutes and **SHOULD** be transported:
 - Hypothermia
 - Drowning with hypothermia and submersion ≤ 60 minutes
 - Pregnant patient with estimated gestational age ≥ 23 weeks (obvious pregnancy)
 - Lightning strike/significant electrocution
- b. Sustained ventricular fibrillation or pulseless ventricular tachycardia **SHOULD** continue to receive resuscitative efforts on scene until the patient converts to asystole or PEA, or has a persistent EtCO₂ < 10 .
- c. Once transport has been initiated, care should be continued until the patient has been delivered to the appropriate facility.
 - Consider non emergent transport if termination of resuscitation conditions have been met.
- d. Only the coroner can provide time of death. When documenting please use the phrase “termination of resuscitative efforts” and provide the time of termination and document the agency’s primary medical director name as the standing order physician.
 - If medical control is contacted document the name of the physician and details of the discussion.

Potential Crime Scene

- a. If the situation appears to be a potential crime scene;
 - During patient care limit scene alteration as much as possible beyond what is required for patient care and scene safety.
 - Observe the position of anything relevant to the body (such as sheets, weapons, etc.) and the position of the body. Make notes (for law enforcement) about these and about anything disturbed as soon as possible.
 - Do not leave the scene until law enforcement assumes control
 - Consider shielding the body if in public view as long as it does not disturb the potential crime scene.

Documentation

- a. Documentation is extremely important when dealing with a death in the field or termination of resuscitation and **SHOULD** include the following:
 - Position of the patient when found
 - Details on the environment
 - Name of the physician contacted for pronouncement
 - Name of the person/entity the patient was released to (police, nursing home, Hospice, coroner etc.)
 - How the DNR/ advanced directive was identified
 - Attach EKG to ePCR, if applicable

Mandatory Reporting

Description

- a. This guideline is designed to assist the prehospital provider in determining mandatory reporting situations as per C.R.S. 19-3-304 passed in 2014 which extends the role of mandated reporters to EMS providers in Colorado.

Definition of Abuse

- a. Any recent act or failure to act on the part of a parent or caretaker which results in death, serious physical or emotional harm, sexual abuse or exploitation OR an act or failure to act which presents an imminent risk of serious harm.
- b. Forms of Abuse
 - Neglect
 - Physical
 - Sexual
 - Emotional

Mandatory Reporting

- a. Mandated reporters are to “register their suspicion” of abuse. This is not considered a direct accusation
- b. Informing providers at the receiving facility of suspicions for DOES NOT meet the requirements of a mandated reporter - EMS providers ARE REQUIRED to register their suspicion with the appropriate authorities.
- c. If the mandatory reporter suspects one of the following they are to immediately report the information to local law enforcement and/or appropriate authorities either by written and/or verbal report:
 - Known or suspected above mentioned abuse on a child or “at-risk elder,” who is 70 or older
 - Adult with domestic assault injury
- d. Report Information
 - The name, address, age, sex, and race
 - The name(s) and address(s) of the person(s) responsible for the suspected abuse or neglect (if known)
 - The nature and extent of the injuries (if known)
 - Knowledge of previous cases of known or suspected abuse or neglect
 - The family composition, including any siblings
 - The name, address and/or contact phone number, and occupation of the person making the report
 - Relation of the person making report to the child and/or how information was obtained
 - Any action taken by the reporting source
 - Any other information reporting person feels is important.
- e. Mandatory reporters that **DO NOT** report abuse can be:
 - Charged with a class 3 misdemeanor
 - Liable for damages proximately caused by failing to report

Special Considerations

- a. Call **1-844-CO-4-Kids** or **1-844-264-5437** to report your concerns if law enforcement or appropriate authorities are unavailable.
- b. Protecting patient confidentiality **DOES NOT** legally justify a failure to report
- c. There is established immunity for reporters “acting in good faith”
- d. During transport and treatment;
 - Confine history to pertinent medical needs
 - Observe patients behavior around caregivers
 - Provide same-sex provider if possible and respect patient’s emotional needs
 - Don’t judge, accuse or confront victim or suspected assailant
 - Protect evidence when dealing with assault, no washing or changing clothes

Physicians at the Scene



Description

- a. This guideline is designed to assist the prehospital provider with physicians on a scene of an incident
- b. EMS Medical Directors have directed that a physician wishing to take responsibility for a patient on the scene must identify him/herself as a physician and should be able to show his license; otherwise prehospital care providers are obligated to continue their treatment of the patient.
- c. Non-EMS system physicians may direct patient care if they:
 - Are on scene **AND**
 - Identify as well as show proof (MD or DO license) **AND**
 - Agree to assume care of the patient **AND**
 - Sign the PHYSICIAN RESPONSIBILITY AT THE SCENE form **AND**
 - Stay with that patient until reaching the hospital, preferably in the transporting vehicle

Special Considerations

- a. If the MD contradicts any EMS guidelines, the highest level EMS provider will follow EMS guidelines in care of the patient.
- b. Notify the receiving facility that the patient is in the care of a licensed physician that is accompanying patient to the hospital.
- c. Document what physician was available through medical control as well as the physician who accepted responsibilities.
 - a. Name
 - b. License number and state
 - c. Contact phone number

Physician Responsibility Signature

The EMS Medical Directors would like to remind any physician wishing to take responsibility for a patient on the scene must identify him/herself as a physician and should be able to show his license; otherwise, prehospital care providers are obligated to continue their treatment of the patient. If the physician assumes responsibility for the patient, it is his/her responsibility to stay with that patient until reaching the hospital, preferably in the transporting vehicle.

As a physician who plans to assume care of this patient, I understand that the prehospital care providers are acting under standing orders and are performing under the license of their physician advisor. I feel that I can provide care to this patient that is more beneficial than that available through the prehospital care system of EMTs and Paramedics. I request, therefore that I be allowed to assume care and I agree to accompany the patient to the hospital.

Signature

Please Print Name

Interfacility Transfers

Description

- a. This guideline is designed to assist the prehospital provider with specific acts allowed during an interfacility transport.
- b. Prehospital providers may, under the supervision and authorization of a medical director, perform advanced emergency medical care acts and or administer medications consistent with and **NOT** to exceed those listed in Appendices A through D of [CHAPTER TWO - RULES PERTAINING TO EMS PRACTICE AND MEDICAL DIRECTOR OVERSIGHT](#)
- c. The following medical skills and acts are approved for interfacility transport of patients, with the requirements that the skill, act or medication allowed must have been initiated in a medical facility under the direct order and supervision of licensed medical providers, and are NOT authorized for field initiation.
- d. EMS providers should continue the same medical standards of care with regards to patient monitoring that were initiated in the facility.
- e. EMS providers at any level of certification **SHALL** decline to transport any patient he or she believes requires a level of care beyond his or her scope of practice.
- f. Patients who require special monitoring (e.g. central venous pressure, intracranial pressure), transport of multiple IV medications, or specialized equipment (i.e. intra-aortic balloon pump) should remain under the care of an experienced critical care practitioner, and every attempt should be made to transport these patients while maintaining an appropriate level of care. The capabilities of the facility and the transporting agency and, most importantly, the safety of the patient should be considered when making transport decisions.
- g. Any medical skill and act not included in the following table is not allowed unless a waiver to the rules has been granted.
- h. The EMS provider will determine transport priority and may delay the transfer due to high risk weather and/or patient condition assessment. Refer to individual agency policy.

Interfacility Transfers



Interfacility Transport Acts Allowed	EMT	EMT-IV	Paramedic
Fluid Administration/Maintenance			
Monitoring and maintenance of hospital/medical facility-initiated crystalloids	NO	YES	YES
Monitoring and maintenance of hospital/medical facility-initiated colloids (non-blood component) infusions	NO	NO	YES
Monitoring and maintenance of hospital/medical facility-initiated blood component infusion	NO	NO	YES
Initiate hospital/medical facility supplied blood component infusions	NO	NO	YES
Total parenteral nutrition (TPN) and/or vitamins	NO	NO	YES
Airway/Ventilation/Oxygen			
Ventilators - Automated Transport (ATV) ¹	NO	NO	YES
¹ Use of automated transport ventilators (ATVs) is restricted to the manipulation of tidal volume (TV or VT), respiratory rate (RR), fraction of inspired oxygen (FIO ₂), and positive end expiratory pressure (PEEP). Manipulation of any other parameters of mechanical ventilation devices by EMS providers requires a waiver to these rules.			
Aortic Balloon Pump Monitoring	NO	NO	NO
Chest Tube Monitoring	NO	NO	YES
Central Venous Pressure Monitor Interpretation	NO	NO	NO
Cardiac Medications			
Anti-arrhythmic - amiodarone - continuous infusion	NO	NO	YES
Anti-arrhythmic - lidocaine - continuous infusion	NO	NO	YES
Anticoagulant - glycoprotein inhibitors	NO	NO	YES
Anticoagulant - heparin (unfractionated)	NO	NO	YES
Anticoagulant - Low Molecular Weight Heparin (LMWH)	NO	NO	YES
Diltiazem/ Cardizem infusion	NO	NO	YES
Dobutamine	NO	NO	NO
Epinephrine - infusion	NO	NO	NO
Nicardipine	NO	NO	YES
Nitroglycerin, intravenous	NO	NO	YES
Norepinephrine	NO	NO	NO
High Risk OB Medications			
Magnesium sulfate infusion	NO	NO	YES
oxytocin / Pitocin infusion	NO	NO	YES
Miscellaneous Medications			
Antibiotic infusions	NO	NO	YES
Antidote infusion - sodium bicarbonate infusion	NO	NO	YES
Electrolyte infusion - magnesium sulfate	NO	NO	YES
Electrolyte infusion - potassium chloride	NO	NO	YES
Insulin	NO	NO	YES
Mannitol	NO	NO	YES
Methylprednisolone/ Solu-cortef - infusion	NO	NO	YES
Octreotide	NO	NO	YES
Pantoprazole/ Protonix	NO	NO	YES

Waivers



Description

- This guideline is designed to assist the prehospital provider with specific skills and or medications allowed through the waiver process.
- In Colorado, the EMS provider scope of practice is defined by the Colorado Division of Public Health and Environment (CDPHE). Their decisions are based on recommendations from the Colorado Emergency Medical Practice Advisory Council; a state council of experts in EMS. The EMS scope of practice for Colorado is known as ***“CHAPTER TWO - RULES PERTAINING TO EMS PRACTICE AND MEDICAL DIRECTOR OVERSIGHT”***
- If a medical director wishes to allow the EMS providers serving under their license to go beyond Chapter 2, granting additional medications or skills into their treatment options, they may apply to the EMPAC for a waiver of the skill or medication they wish to add; or for what additional indication they would like to use an existing medication. If enough medical directors are applying for the same waiver, the EMPAC can consider moving the waived skill or medication into the standard scope of practice at the next review and revision.
- Scope of practice waivers may be authorized by the medical director under standing orders or direct verbal order of a physician, including by electronic communications, depending upon what was specifically requested in the application and what the EMPAC specifically approved.
- NO** EMS provider shall function beyond their scope of practice identified in Chapter 2 until their medical director has received official written confirmation of the waiver being granted by the department AND the medical director has given them specific permission to do so.
- Any waived skill or medication within the prehospital guidelines will be **outlined, highlighted, or written in BROWN**

Specific System Waiver

Waivered	EMT	EMT-IV	Paramedic
Medications			
Ketamine (RSI Induction ONLY)	NO	NO	SO
Ketamine (extreme agitation/ExDs)	NO	NO	SO
Ketamine (pain management))	NO	NO	SO
Rocuronium (RSI ONLY)	NO	NO	SO
Succinylcholine (RSI ONLY)	NO	NO	SO
Vecuronium (RSI ONLY)	NO	NO	SO
Skills			
Rapid sequence intubation	NO	NO	SO

DETOX Center Evaluation

Description

- a. To provide a mechanism for the safe evaluation and triage of patients who are intoxicated, but require neither acute medical care nor comprehensive evaluation in an emergency department, so that they may more appropriately be transported to a detoxification facility for treatment, rather than to a general facility.

Patient Population

- a. Patients, who are currently intoxicated, have no apparent medical illness or injury, and have no other resource available to them to provide an opportunity for safe detoxification.

Evaluation Procedure

- a. Obtain a history that includes recent events, past medical history, recent health status, current symptoms of illness, recent traumatic episodes, recent alcohol intake, medication and/or recreational drug use.
- b. Perform a physical and mental status examination
- c. Determine blood glucose and oxygen saturation levels
- d. Obtain baseline vital signs
- e. Evaluate patient's ability to ambulate

Admission Criteria

- a. Alcohol intoxication and/or alcohol withdrawal symptoms
- b. Under the influence of drugs, or in withdrawals from drugs; as defined by urine toxicology screen, breathalyzer, or client self-report (if self-referred)
- c. If patient is placed on an Emergency Commitment, toxicology screen must be done
- d. 18 years of age, or older

Exclusion Criteria

- a. See Detox Evaluation Checklist

Disposition Procedure

- a. If patient meets the criteria of the currently available checklist and physician approval obtained, transport patient directly to Detoxification Center, unless they are on divert.
- b. Complete patient care report as normal
- c. If the status of the patient changes during transport such that the patient no longer meets admission criteria for the Detoxification Center, re-direct transport of the patient to a hospital emergency department (utilizing current destination guidelines).

Special Considerations

- Patients with active bed bugs must be decontaminated and all personal belongings need to be bagged before arrival.
- Patients with lice/scabies must be treated prior to admission
- Combative or violent individuals must be medicated prior to arrival

DETOX Center Evaluation

Detoxification Center Evaluation Checklist

a. Inclusion Criteria

- Alcohol intoxication and/or alcohol withdrawal symptoms
- Under the influence of drugs, or in withdrawals from drugs; as defined by urine toxicology screen, breathalyzer, or client self-report (if self-referred).
- If patient is placed on an Emergency Commitment, toxicology screen must be done
- 18 years of age, or older

b. Exclusion Criteria

Acceptable Vital Sign Parameters			
Blood Pressure: SBP < 180 & > 90, DBP < 110 & > 60	Temperature: > 97.0°F and < 101.1°F		BGL: > 60 and < 300 mg/dl
Respirations: > 10 and < 24	SpO₂: ≥ 88%	Pulse: > 60 and < 120	
1. Does the individual require O ₂ , CPAP, and/or nebulizer treatments?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
2. Does the individual require nursing attention to address wound care and/or dressing changes?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
3. Does the individual have active open wound/infection, Conjunctivitis, Scabies, Lice and/or Bedbugs?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
4. Does the individual require ambulatory assistance of any kind?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
5. Does the individual require assistance with his/her activities of daily living (ADLs)?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
6. Does the individual have medical condition resulting in bowel and/or bladder incontinence?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
7. Does the individual have uncontrolled nausea, vomiting, diarrhea and/or pain?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
8. If the individual has a Foley catheter or ostomy bag, does he/she need help with and/or supplies?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
9. Has the individual recently experienced any significant mechanism of injury?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
10. If the individual has head injury, is the score to the Glasgow coma scale ≤ 13?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
11. Is the individual excessively disruptive, combative and/or uncooperative?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
12. Does the individual have any physical and/or MH diagnosis requiring medical staff assistance?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
13. Is the individual currently on any anticoagulant therapy?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
14. Is the individual currently taking Suboxone or Methadone?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
15. Has the individual delivered a child within the last 2 weeks?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
16. Is the individual pregnant?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
17. History of Seizures with active seizures, or active withdrawal seizures or prolonged post-ictal state?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Patient MUST meet ALL above vital sign criteria			
A "Yes" to any question disqualifies a patient to be directly admitted to Detox from the field			

c. Additional Considerations

- Patients with active bed bugs must be decontaminated and all personal belongings need to be bagged before arrival.
- Combative or violent individuals must be medicated prior to arrival

C.A.R.E.S



Description

- a. The purpose of the Community Assistance, Referral and Education Services (C.A.R.E.S.) program is to provide citizens with additional 911 related services such as but not limited to patient education, patient advocacy and assistance with medical system navigation. The goal is to provide efficient patient care and ensure appropriate allocation of medical resources in attempt to reduce inappropriate 911 responses.

Enrollment

- a. Enrollment can be obtained through:
 - Recurrent users of the 911 system
 - i. Six 911 calls in six months
 - Frequent E.D. users
 - Any patient identified by partnering community health organizations that would benefit from this program

Physician Responsibility Signature

- a. All persons/patients participating in the C.A.R.E.S. program must have a "Release of Information/Consent" form signed and retained on file. Additionally, each enrolled person/patient will be provided a "Notice of Privacy Practices".
- b. Within the scope of practice and approval of the EMS Medical Director, the following activities may be provided:
 - Home Safety-Environmental/Fall Risk Checks
 - Social Assessments
 - Clinical Assessment and Intervention
 - Coordination and/or referral of Medical-Social Care
 - Follow up
 - Communication/coordination back to the referral entity
- c. Activities may be performed in person or by phone

Law Enforcement Blood Draw

Description

- a. This guideline is designed to assist the prehospital provider when requested to complete a blood draw for CSP

Procedure

- a. If a blood draw is requested by CSP, the following procedures shall commence:
 - The State Trooper shall contact CSP Dispatch and advise the need for a blood draw.
 - CSP Dispatch shall contact CSFD Dispatch who will identify the closest available CSFD fire station to the State Trooper.
 - CSFD Dispatch will notify the fire station by phone with an estimated ETA for the State Trooper.
 - CSP understands that if an emergency call for service arises prior to the State Trooper's arrival at the fire station, the fire unit will respond to the call for service.
 - i. Upon arrival of the State Trooper, CSFD will notify dispatch of an in-station alarm for a CSP blood draw. This request will take this fire unit out of service while performing the blood draw.
 - ii. CSFD personnel will document this activity as indicated below.
 - If at any time during this process a significant emergency incident (i.e., structure fire, cardiac arrest, etc.) arises in the station's district, the company shall immediately return to service and respond to the emergency incident.
 - i. CSP shall follow the above procedure to identify a different fire station to complete the blood draw procedure.
 - All materials for the blood draw procedure will be provided by CSP
 - i. CSP will be responsible for all evidence collected as part of the blood draw procedure including storage and testing of the samples.
 - A Paramedic or an EMT-IV may perform the procedure

Blood Specimen Collection Instruction

- a. Blood specimen collection **MUST** be performed only by a physician, registered nurse, emergency medical technician, or other qualified person.
- b. The kit contains a shielded blood collection needle adapter. Please refer the instruction sheet for use.

Special Considerations

- a. Complete documentation of procedure on ePCR system

Airway Procedures



Provider Level	NPA	OPA	Continuous Positive Airway Pressure (CPAP)	Supraglottic Airway Device(s)	Oral Intubation	Nasal Intubation	Surgical and Needle Cricothyrotomy	Needle Decompression
EMT	YES	YES	YES	YES	NO	NO	NO	NO
EMT-IV	YES	YES	YES	YES	NO	NO	NO	NO
Paramedic	YES	YES	YES	YES	YES	NO	YES	YES

Nasopharyngeal Airway (NPA)

- a. Indications:
 - Unconscious/semi-conscious with an intact gag reflex needing airway support
- b. Contraindications:
 - Improper size
 - Any resistance
- c. Special Considerations:
 - Can be utilized in patients potential basilar skull fractures when airway management is required

Oropharyngeal (OPA)

- d. Indications:
 - Unconscious without an intact gag reflex needing airway support
- e. Contraindications:
 - Gag reflex
- f. Special Considerations:
 - If ineffective consider a more advanced airway

Continuous Positive Airway Pressure (CPAP)

- g. Indications:
 - Respiratory conditions exhibiting severe distress or failure such as:
 - i. CHF/Pulmonary Edema
 - ii. High altitude pulmonary edema
 - iii. Asthma
 - iv. COPD/Emphysema
 - v. Drowning/Near-Drowning
 - vi. Pneumonia
 - vii. Hyperkalemia
- h. Contraindications:
 - Respiratory or cardiac arrest
 - Systolic BP < 90 mmHg
 - Lack of gag reflex
 - Altered mental status, unable to follow verbal instructions or signal distress
 - Vomiting or active upper GI bleed
 - Suspected or known pneumothorax
 - Trauma
 - Patient size or anatomy prevents adequate mask seal

Airway Procedures

i. Special Considerations:

- Should patient deteriorate on CPAP:
 - i. Troubleshoot equipment
 - ii. Consider advanced airway
 - iii. Assess need for possible chest decompression due to tension pneumothorax
 - iv. Assess for possibility of hypotension due to significantly reduced preload from positive pressure ventilation.
- There is no age criteria; it is based on size of the mask. If the mask properly fits (without modification), then use is allowed.
- In-line nebulized medications may be given during CPAP as clinically indicated and in accordance with manufacturer guidelines.
- Continuously monitor EtCO₂
- The default size of mask utilized is medium, this will fit the majority of patients
- If the patient is anxious consider mild sedation, see [BEHAVIORAL EMERGENCY GUIDELINE](#)
- Consider pretreating with an antiemetic, see [NAUSEA VOMITING GUIDELINE](#)

Supraglottic Airway

a. Indications:

- Cardiac arrest after assuring continuous compressions, defibrillation, and BLS airway management has been completed
- Unresponsive patient without a gag reflex
- Rescue airway when intubation is difficult/impossible due to patient access or airway anatomy

b. Contraindications:

- Intact gag reflex
- Obstructive lesions below the glottis
- Caustic ingestion
- Patients under/over height/length for tube size used
- Patients with known or suspected esophageal varices

c. Special Considerations:

- Ensure correct sizing per manufacturer recommendations for correct function
- Use with caution in patients with broken teeth, which may lacerate balloon, if applicable

Oral Endotracheal Intubation

a. Indications:

- Patients whose clinical condition warrants airway or breathing management due to worsening or impending respiratory compromise and/or the unconscious patient without a gag reflex.

b. Contraindications:

- None in the need for definitive airway management
- Pediatric patients <13 of age

c. Special Considerations:

- Have backup plans including proper rescue device equipment and supplies ready
- Video laryngoscopy is preferred during initial attempt, if available
- Utilize bougie, if applicable
- In addition to waveform capnography, confirm and document **3** other confirmations of correct placement
- Ventilate at age appropriate rates and/or condition
- If the intubated patient deteriorates, think “DOPE”
 - i. Dislodgement, Obstruction, Pneumothorax, Equipment failure (no oxygen)

Airway Procedures

Cricothyrotomy

a. Indications:

- A life-threatening condition exists AND advanced airway management is indicated AND you are unable to establish an airway or ventilate the patient by any other means. (“Cannot intubate/cannot ventilate”). Examples include but are not limited to;
 - i. Acute upper airway obstruction, which cannot be relieved by obstructed airway maneuvers.
 - ii. Upper airway trauma with inability to orally intubate a patient who has severe respiratory insufficiency.
- Age range
 - i. Age ≥ 8 years old: ***Surgical, bougie assisted***
 - ii. Age 1 to 8 years old: ***Needle (commercial device)***
 - iii. <1 years old: Not clinically indicated

b. Contraindications:

- Tracheal transection
- Significant trauma to the cricoid cartilage or larynx
- Unable to locate anatomical landmarks

c. Special Considerations:

- Bleeding is common, even with correct technique, have suction available
- For surgical a cricothyrotomy, bougie assisted technique is preferred

Needle Decompression

a. Indications:

- Suspected tension pneumothorax associated with hypotension and/or poor perfusion
- Blunt or penetrating traumatic cardiac arrest

b. Contraindications:

- None in the emergency setting

c. Special Considerations:

- If patient deteriorates after needle decompression, be prepared to assist ventilation
- Acceptable locations include the 2nd or 3rd intercostal space at the midclavicular line or 4th or 5th intercostal space at the midaxillary line.
- Depth of insertion for pediatrics is 1/3 the depth of the chest.
- During insertion guide the catheter over the top of the lower rib.
- Angiocath may become occluded with blood or by soft tissue be prepared to repeat the procedure as clinically indicated.

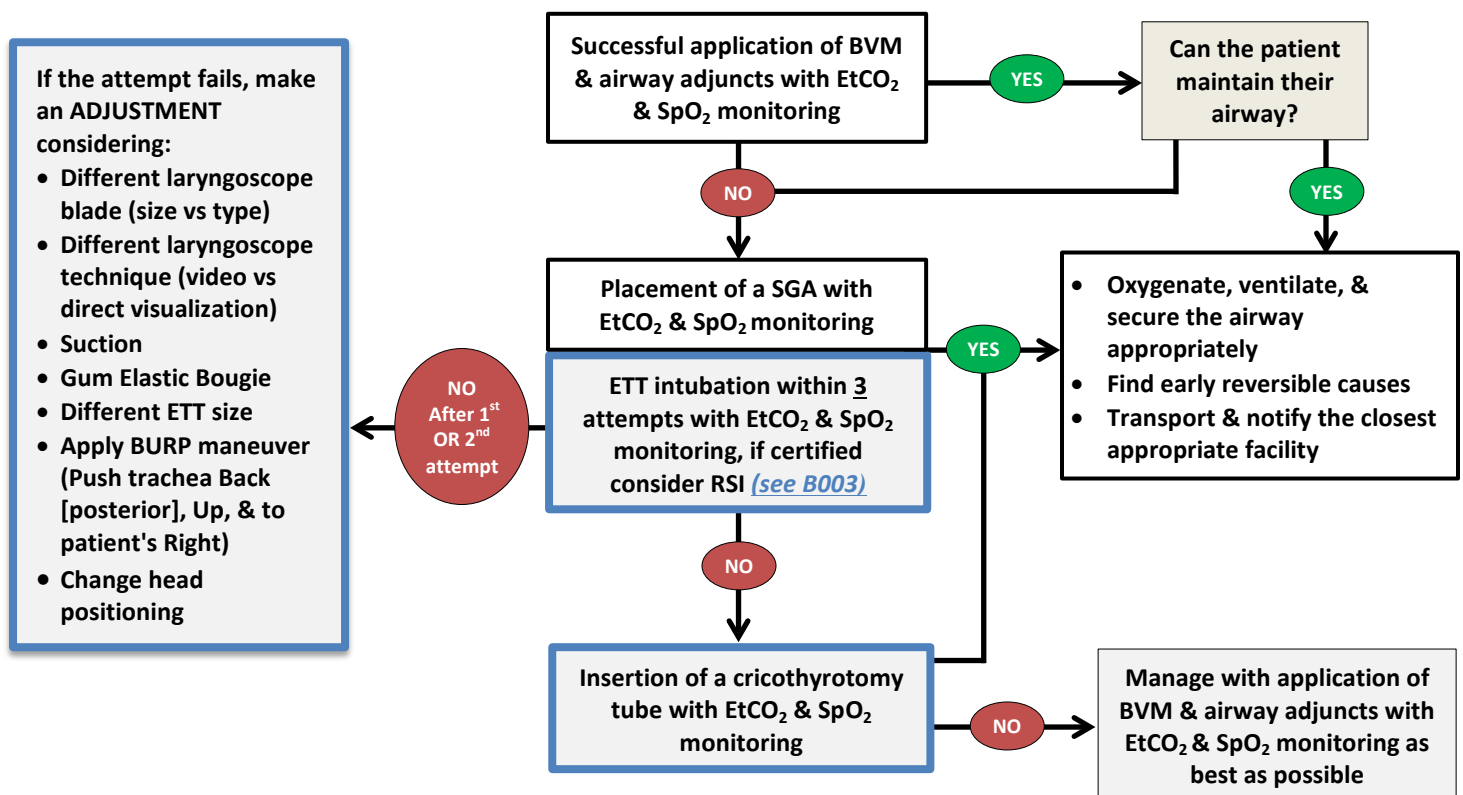
Airway Management

Definition:

- a. The GOAL of airway management is to ensure patients receive adequate ventilation and oxygenation. This can be accomplished through various techniques including; but not limited to, basic positioning, adjuncts, and/or advanced level airways.
 - Assessment is crucial to the success of airway management helping to identify complications before they arise and thus ensuring a proper device is utilized in the right clinical situation.
 - A **difficult** airway is defined as the clinical situation in which a conventionally trained prehospital provider experiences difficulty with maintaining adequate ventilation and oxygenation.
 - Successful airway management is **NOT** defined as the placement of an endotracheal tube (ETT), it is the ability to effectively oxygenate or ventilate.

Description

- a. This guideline is designed to assist the healthcare provider navigate airway management.
- b. Consider early insertion of a supraglottic airway (SGA), if ventilation with BVM and airway adjuncts unsuccessful.
- c. When inserting an ETT the 1st intubation attempt **SHOULD** utilize a video laryngoscope **IF AVAILABLE** in conjunction with continuous waveform EtCO₂ and pulse oximetry.
 - Recommend oxygen administration at 8 L via nasal cannula during ETT attempt
- d. **NO MORE THAN (3) ETT TOTAL ATTEMPTS PER PATIENT**
 - Definition of an ETT intubation attempt is when the blade passes the teeth with the **INTENT** to insert an ETT through the vocal cords.
- e. Consider cricothyrotomy in patients where effective oxygenation and/or ventilation cannot be provided.



Rapid Sequence Intubation

Description

- a. This guideline is designed to assist the healthcare provider navigate the rapid sequence intubation procedure
- b. **ONLY** paramedics that have successfully completed an approved training program sponsored by the agency for which the provider intends to utilize RSI are authorized users of this guideline.
- c. RSI paramedics **MUST** maintain proficiency
 - The agency for which the paramedic provides RSI services **MUST** possess a valid procedure waiver from the Colorado Department of Public Health and Environment (CDPHE) and the Emergency Medical Practice Advisory Council (EMPAC).
- d. All medications in this guideline will be given by standing order
 - Medications or dosages may **NOT** be changed in any way, including by on-line medical control
 - **ONLY** RSI waived paramedics are **ALLOWED** to administer RSI specific medications

Indications (general)

- a. Age of the patient **≥13 YEARS OLD**
- b. RSI candidates include, but not limited to;
 - Combative closed head injury patients, with or without trismus; or suspected subarachnoid hemorrhage, intracranial masses, or ischemic strokes resulting in significant impairment of mental status with resultant combativeness and/or trismus.
 - Glasgow Coma Scale **≤ 8**
 - Status seizures
 - Severe respiratory failure and or impairment with an intact gag reflex or imminent respiratory arrest

Selection Criteria

- a. Principles of good selection will result in avoidance of almost all of the common difficulties in failing to secure a tracheal intubation.
- b. There are three (3) basic rules regarding patient selection that **MUST** be reviewed every time a RSI procedure is considered. These rules incorporate and summarize the general concepts of selection criteria outlined in detail in the RSI course and are formatted as questions.
 - **Can I get a good facial seal with the Bag-Valve-Mask?**
 - **Is the airway patent?**
 - **Do I think I can intubate this patient?**

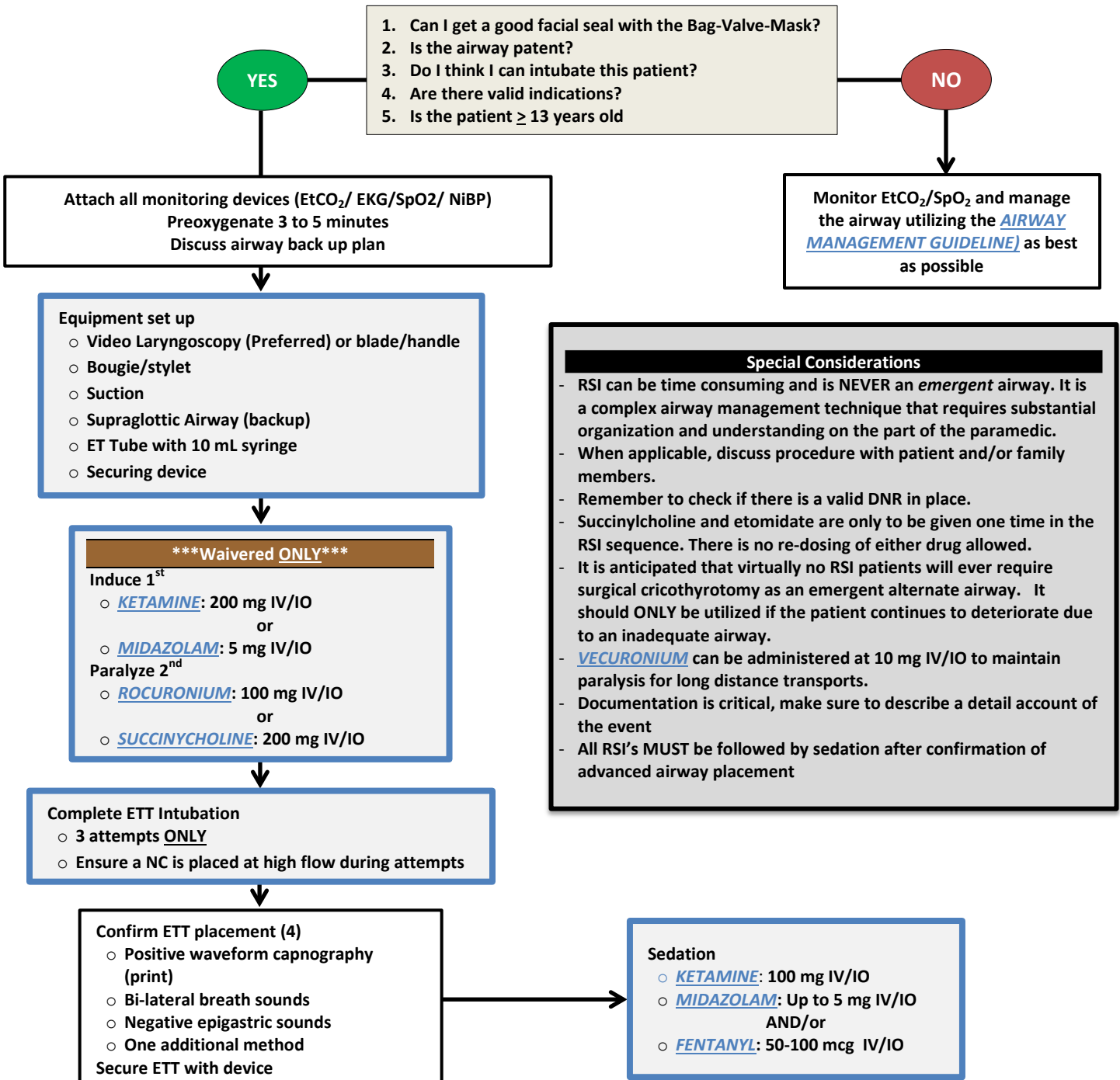
Contraindications

- a. Any absolute contraindication to the induction agent or paralytic
- b. Patients who **DO NOT** meet the selection criteria for intubation as discussed above
- c. Patients who **DO NOT** possess a gag reflex, rendering RSI medications unnecessary
- d. Age of the patient **<13 YEARS OLD**

Complications

- a. Cardiac dysrhythmias related to the use of succinylcholine
- b. Malignant Hyperthermia or the suspected presence of pseudocholinesterase deficiency
- c. Failure to Intubate
- d. Unrecognized esophageal intubation
- e. Vomiting and aspiration
- f. Excessive gagging on back-up airway when used in failed intubations

Rapid Sequence Intubation



Pain Management



Description

- a. This guideline is designed to assist the prehospital provider effectively assess and manage patient pain and discomfort in the prehospital environment

Indications for Pain Management

- a. Pain stemming from an isolated traumatic injury or an easily identifiable medical condition
- b. Pain associated with myocardial ischemia. (See [ACS GUIDELINE](#))
- c. Patient complaint of generalized abdominal pain.

Precautions

- a. Most pain medications should only be given to hemodynamically stable patients and titrated slowly to effect. In hemodynamically unstable patients, consider giving smaller, incremental doses of [FENTANYL](#) or [KETAMINE](#).
- b. Pain medications may cause changes in hemodynamic status and/or respiratory depression (including apnea) that can occur suddenly and without warning, and are more common in children and the elderly.
- c. Chest wall rigidity has been reported with rapid administration of [FENTANYL](#)
- d. Strongly consider ½ typical dosing in elderly patients or when combining benzodiazepines and opioids

General Patient Care Requirements

- a. All patients receiving pain medication should receive constant ECG, SpO₂, EtCO₂ and blood pressure monitoring. When this is not possible (i.e. in a back country environment), pulse oximetry and constant verbal engagement with the patient are the minimum monitoring requirements.

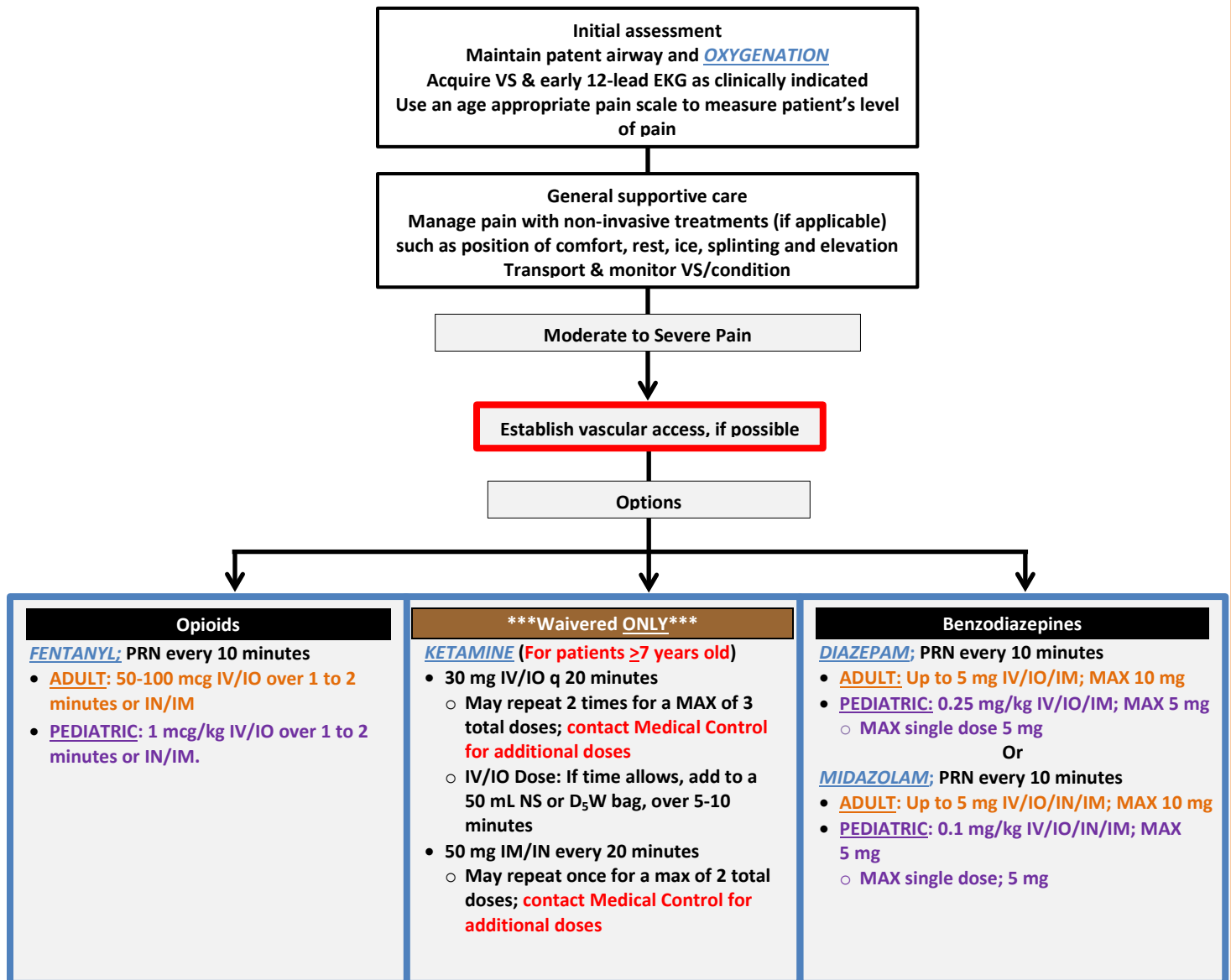
Other Medication Options

- a. The administration of a combination of benzodiazepines and opiates, for the purpose of pain management, anxiety and/or muscle relaxation **is** permitted.
 - Ensure that the patient can independently maintain an open airway and normal breathing pattern, maintain normal hemodynamics, and respond appropriately to physical stimulation and verbal commands.
- b. Consider an antiemetic prior to administration of an opioid for nausea, see [NAUSEA VOMITING GUIDELINE](#)

Special Considerations

- a. The objective of pain management is not the complete relief of all pain, but rather, to make a patient's pain tolerable enough to allow for adequate assessment, treatment and transport.
- b. The use of benzodiazepines may be indicated for pain as a result of spasms, but will not control other types of pain as effectively as the appropriate dose of opioids.
- c. Be prepared to treat respiratory depression / apnea
- d. In trauma pain is secondary, look for major bleeding or threats to life first, once stabilized consider pain management.

Pain Management



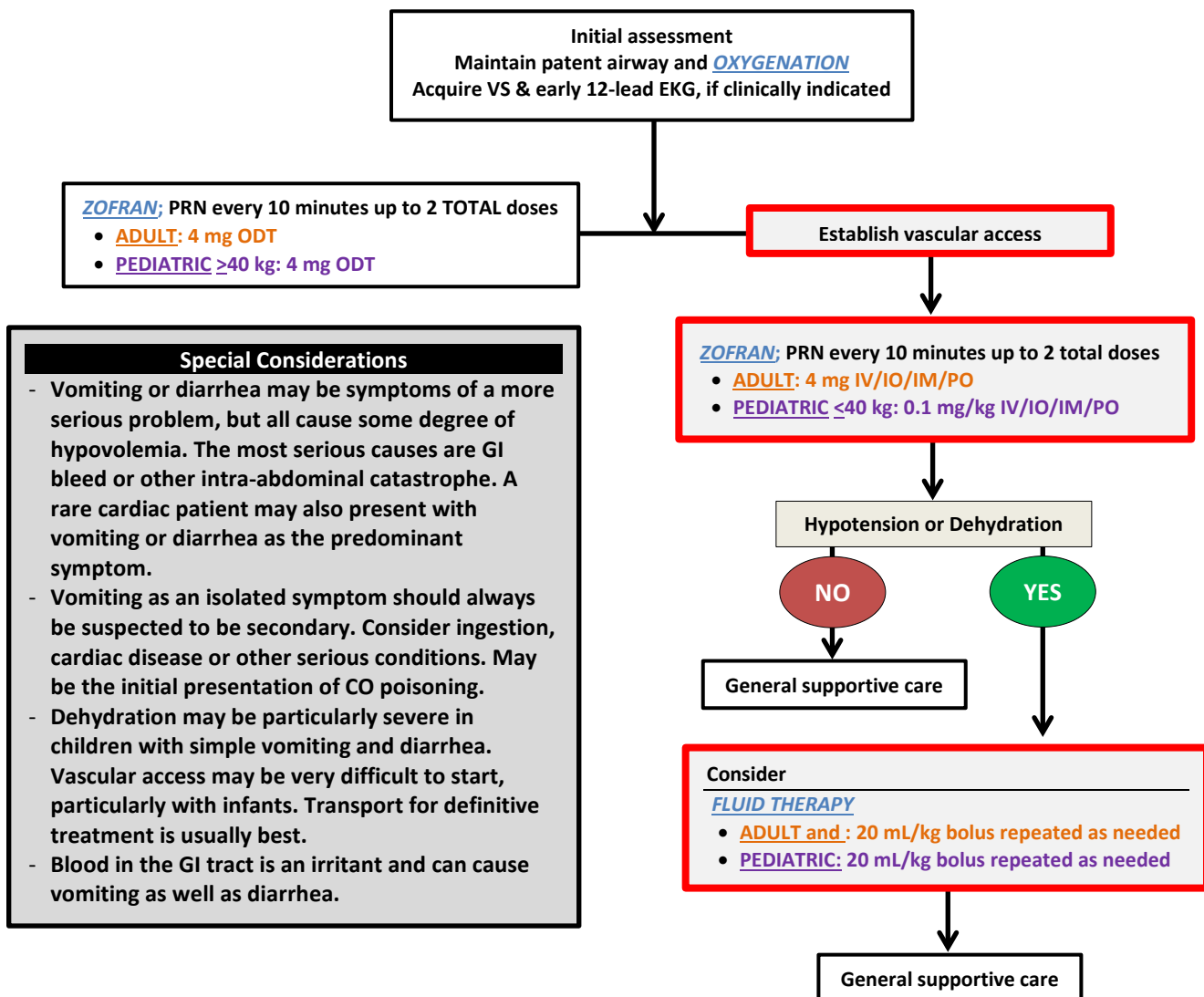
Nausea/Vomiting

Description

- This guideline is designed to assist the prehospital provider in the treatment of nausea and/or vomiting
- Through the administration of an antiemetic the chance of aspiration can be reduced due to excessive vomiting, and increase the effectiveness of pain management medications administered prehospital.
- In addition, by disrupting the stimulus to vomit and by reducing nausea, the patient can be more comfortable during transport.

Indications

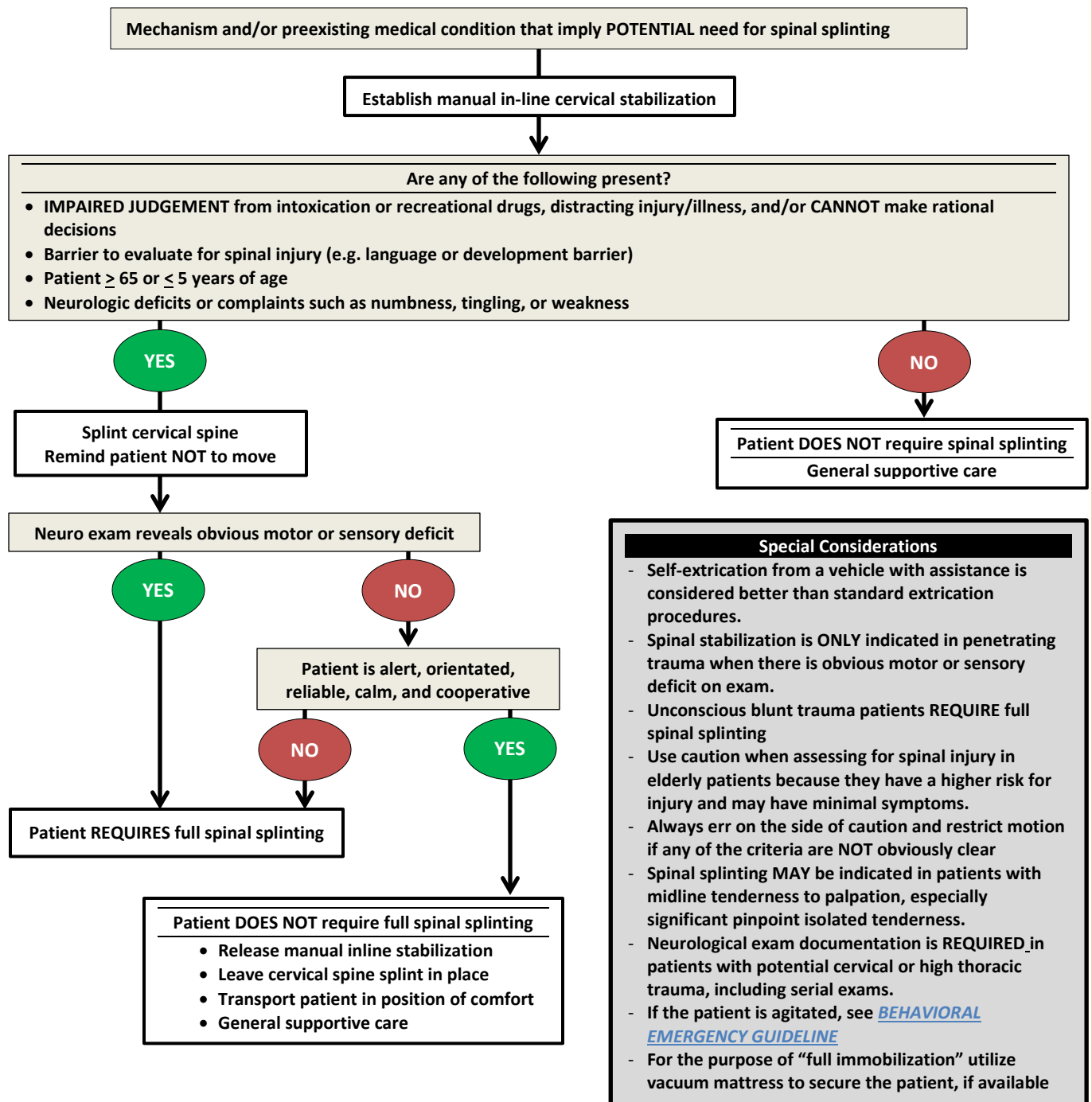
- Nausea or vomiting stemming from any medical or traumatic complaint
- Prophylaxis treatment for [PAIN MANAGEMENT](#), [CPAP](#), [SELECTIVE SPINAL SPLINTING](#)
- Prophylaxis treatment for any patient with high risk of motion sickness



Selective Spinal Splinting

Description

- a. This guideline is designed to assist the prehospital providers' decision on whether or not to fully splint a patient with a suspected cervical spine injury.
- It is modeled after the National Emergency X-Radiography Utilization Study (NEXUS) criteria



Cardiac Related Procedures

Provider Level	Cardiac Monitoring (Noninterpretive)	Cardiac Monitoring (Interpretive)	12-Lead EKG	Automated External Defibrillator	Manual Defibrillation	Synchronized Cardioversion	Transcutaneous Pacing (TCP)	Vagal Maneuvers
EMT	YES	NO	YES	YES	NO	NO	NO	NO
EMT-IV	YES	NO	YES	YES	NO	NO	NO	NO
Paramedic	YES	YES	YES	YES	YES	YES	YES	YES

Cardiac Monitoring

- Indications:
 - Patients with clinical syndromes or situations at increased risk of cardiac arrhythmias
 - Patients who experience transient symptoms such as dizziness, palpitation, syncope, and chest pain that may suggest a cardiac arrhythmia.
 - Routine monitoring of heart rate
- Contraindications:
 - None in the emergency setting
- Special Considerations:
 - Avoid placement directly over implanted devices
 - Avoid placement over medication patches. Remove patch, cleanse skin, and apply electrodes

12-Lead EKG

- Indications:
 - Patients with clinical syndromes or situations at increased risk of cardiac arrhythmias
 - Patients with suspicion of acute coronary syndromes
 - Post cardiac arrest patients
- Contraindications:
 - None in the emergency setting
- Special Considerations:
 - Consider right sided or posterior 12-lead EKG if inferior or posterior myocardial infarction is suspected
 - Small areas of hair on the client's chest or extremities may be shaved
 - If patient's skin is exceptionally oily, scaly, or diaphoretic rub the electrode site with a dry 4" x 4" gauze pad or alcohol pad before applying the electrode to help reduce interference in the tracing.
 - During the procedure, ask the patient to breathe normally. If the respirations distort the recording, ask the client to hold his breath briefly to reduce baseline wander in the tracing.

Automated External Defibrillator (AED) and Manual Defibrillation

- Indications:
 - Patients in cardiopulmonary arrest and/or pulseless ventricular tachycardia and/or ventricular fibrillation
- Contraindications:
 - Patients with a pulse
- Special Considerations:
 - Infant pads are generally used for patients < 1 year of age or < 15 kg
 - ENERGY SETTING
 - AED: **ADULT:** Automated, **PEDIATRIC** ≥ Neonate
 - NOT ALLOWED** for neonate pediatric patients
 - Manual: **ADULT:** maximum joules, repeat as needed **PEDIATRIC:** 4 joules/kg repeated as needed

Cardiac Related Procedures

Synchronized Cardioversion

- a. Indications:
 - Tachydysrhythmia with a pulse (ventricular tachycardia, torsades de pointe, SVT, A-fib/Flutter with RVR, etc.) and signs of poor perfusion.
- b. Contraindications:
 - Repetitive, self-terminating, short-lived tachycardias (i.e. runs of non-sustained VT)
- c. Special Considerations:
 - Do not be overly concerned about the dysrhythmias that normally occur in the few minutes following successful cardioversion. These usually respond to time and adequate oxygenation and should only be treated if they persist more than 5 minutes.
 - **MIDAZOLAM** may be used in conscious patients prior to cardioversion
 - ENERGY SETTING
 - i. **ADULT:** Maximum joules, repeat as needed
 - ii. **PEDIATRIC:** 2 joules/kg, repeat as needed

Transcutaneous Pacing (TCP)

- a. Indications:
 - Bradydysrhythmia with a pulse and signs of poor perfusion.
- b. Contraindications:
 - Moderate to severe hypothermia
 - Pulseless cardiac arrest
- c. Special Considerations:
 - Consider **PAIN MANAGEMENT**
 - Muscle tremors may complicate evaluation of pulses; femoral pulse may be more accurate. Utilizes EtCO₂ to help identify improved perfusion
 - Studies indicate no relationship between body surface area, weight, and capture thresholds and although most children will achieve capture between 50 to 100 mA higher current requirements are possible.
 - The pacing rate must be set high enough to perfuse the patient
 - ENERGY SETTING
 - i. **ADULT:** Set rate at 60 beats per minute, begin energy at lowest dose and increase energy until electrical capture.
 - ii. **PEDIATRIC:** Set rate at 80 beats per minute, begin energy at lowest dose and increase energy until electrical capture.

Vagal (Valsalva) Maneuvers

- a. Indications:
 - Stable tachydysrhythmia
- b. Contraindications:
 - Patient unable to attempt the maneuver or follow commands
- d. Special Considerations:
 - Patients should be instructed on how to perform vagal maneuvers properly before attempting one
 - Preferred Technique
 - i. To improve conversions success rate, place the patient in Trendelenburg position and if the patient is able have them draw their knees to their chest. Once in position have the patient blow out the plunger of a 10 mL syringe
 - ii. Any vagal maneuver has a higher success rate when held for 30 seconds
 - iii. Repeat as needed until conversion or patient becomes unstable

Monitoring Devices

Provider Level	Blood Glucose Monitor	SpO ₂	EtCO ₂	SpCO Monitor
EMT	YES	YES	YES	YES
EMT-IV	YES	YES	YES	YES
Paramedic	YES	YES	YES	YES

Blood Glucose Monitor

a. Indications:

- Known or suspected diabetic related complaints
- Patients with metabolic or endocrine disorders and presenting with non-specific complaints
- Patients with altered mental status
- Bradycardia or hypothermia in infants
- Newborn delivery in the field with abnormal APGAR score
- Traumatic brain injury
- Seizures

b. Contraindications:

- None

c. Special Considerations:

- Hypo/Hyperglycemia numbers are relative to patients normal blood glucose level

SpO₂

a. Indications:

- Any and all patients who require an assessment and/or respiratory complaint

b. Contraindications:

- None

c. Special Considerations:

- Inaccurate measurements may be caused by:
 - i. CO poisoning
 - ii. Elevated levels of bilirubin, carboxyhemoglobin, or methemoglobin
 - iii. Externally applied coloring (such as nail polish)
 - iv. Severe anemia or low arterial perfusion
 - v. Motion artifact
 - vi. Hydroxycobalmin administration

EtCO₂

a. Indications:

- Initial and continuous confirmation of advanced airway placement
- Any patient receiving CPR
- Any patient with a respiratory complaint or depression
- Any patient with suspected shock
- Any patient receiving pain management

b. Contraindications:

- None

c. Special Considerations:

- All patients with an advanced airway and/or CPR will have EtCO₂ monitored and documented.
 - i. Copies of the post advanced airway waveform and waveform at time of transfer of care to receiving facility will be attached to the Patient Care Record (PCR).
- Patients with normal cardiac and pulmonary function should have a level of 35 to 45 mmHg

Monitoring Devices

- If no EtCO₂ is detected, evaluate 3 factors:
 - i. Loss of airway function: improper tube placement, apnea
 - ii. Loss of circulatory function: cardiac arrest, exsanguination, massive PE
 - iii. Equipment malfunction: tube dislodgement, adapter is disconnected , or obstruction
- EtCO₂ value > 10 may be utilized to confirm the quality of chest compressions and the adequacy of an airway including BVM and advanced devices. EtCO₂ value 10-20 represents high quality compressions.
 - i. If EtCO₂ value significantly increases, assess for ROSC.
 - ii. In the post resuscitation patient, no effort should be made to lower EtCO₂.

SpCO Monitor

- a. Indications:
 - Known or suspected carbon monoxide poisoning
- b. Contraindications:
 - None
- c. Special Considerations:
 - Be sure to follow manufacturer instructions as some require no direct sun light on probe sensor
 - Inaccurate readings may occur due to misplaced/dislodged probes.
 - If an abnormal level of CO is detected, always confirm by measuring other fingers and average
 - Inaccurate measurements may be caused by;
 - i. Elevated levels of bilirubin, carboxyhemoglobin, or methemoglobin
 - ii. Externally applied coloring (such as nail polish)
 - iii. Severe anemia or low arterial perfusion
 - iv. Motion artifact
 - v. Hydroxycobalmin administration

Vascular Access



Provider Level	IV Access (Peripheral)	IV Access (External Jugular)	IV Access (Umbilical Vein)	IV Access (Arteriovenous Fistula)	IV Access PICC/Central	Intraosseous Access
EMT	NO	NO	NO	NO	NO	NO
EMT-IV	YES	NO	NO	NO	NO	YES
Paramedic	YES	YES	NO	NO	NO	YES

Intravascular (IV) Access

- a. Indications:
 - Where fluid replacement therapy and/or intravascular medications may be clinically indicated
- b. Contraindications:
 - No absolute contraindications exist
- c. Special Considerations:
 - Avoid placing a peripheral IV in an injured, infected, or burned extremity
 - Avoid placing a peripheral IV in a site with a arteriovenous (AV) fistula or an atrophied extremity (stroke patient)
 - Continuous monitoring is indicated to ensure that the IV has not infiltrated
 - If an accidental arterial puncture occurred, as evidenced by arterial pulsation of blood out of the catheter, remove the catheter and apply direct pressure using gauze for at least 10 minutes.
 - Peripherally inserted central catheter (PICC) access including tunneled catheters or implanted ports is **NOT** allowed

Intraosseous (IO) Access

- a. Indications:
 - For adults and pediatrics anytime in which vascular access is difficult to obtain and/or failed in the emergent, urgent, or medically necessary cases.
- b. Contraindications:
 - Fracture of the targeted bone
 - Previous orthopedic procedures near insertion site (prosthetic limb or joint)
 - IO within the past 24 to 48 hours in the targeted bone
 - Infection at the insertion site
 - Inability to locate landmarks or excessive tissue over the insertion site
- c. Special Considerations:
 - Consider alternate site if excessive tissue is present at insertion site
 - Consider alternate site if infection/burn is present at insertion site
 - Acceptable sites for EZ-IO
 - i. Humeral Head (proximal humerus)
 - ii. Proximal tibia
 - Acceptable sites for Manual IO
 - i. Proximal tibia

Wound Care Procedures

Provider Level	Extremity Splinting	Eye Irrigation Non-Invasive	Eye Irrigation Morgan Lens	Hemostatic Agent	Occlusive Dressing	Pelvic Binder	Pressure Dressing	Traction Splint	Tourniquet	Wound Packing
EMT	YES	YES	NO	YES	YES	YES	YES	YES	YES	YES
EMT-IV	YES	YES	NO	YES	YES	YES	YES	YES	YES	YES
Paramedic	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Extremity Splinting

- Indications:
 - Any time a patient complains of extremity pain post trauma, regardless of deformity presence
 - In the presence of gross deformity with circulatory compromise, splint extremity in anatomically correct position
- Contraindications:
 - None
- Special Considerations:
 - Do not allow a deformed extremity to distract you from life threatening injuries that need immediate attention
 - Extremity CMS needs to be checked/documented before and after splinting

Eye Irrigation – Non-Invasive

- Indications:
 - Removal of foreign substance from the eye
 - Chemical burns to the eye after consulting the MSDS or Emergency Response Guideline Manual
- Contraindications:
 - Laceration or penetrating injury to the globe of the eye
 - Chemical burn when chemical is reactive with water
- Special Considerations:
 - MACE is an oil based product. Irrigation with water will only spread the irritant.
 - Safety comes first. Do not irrigate if substance is unknown and there is concern for provider/patient safety
 - Consider [TOPICAL OPHTHALMIC ANAESTHETIC](#)

Eye Irrigation – Invasive (Morgan Lens)

- Indications:
 - Chemical burns to the eye after consulting the MSDS or Emergency Responses Guideline Manual
- Contraindications:
 - Laceration or penetrating injury to the globe of the eye or the eyelid
 - Chemical burn when chemical is reactive with water
 - Patients who have been sprayed in the eye with MACE
- Special Considerations:
 - The Morgan Lens can be used when lengthy irrigation time is required
 - Consider [TOPICAL OPHTHALMIC ANAESTHETIC](#)

Wound Care Procedures

Hemostatic Agents

- a. Indications:
 - Patients with external bleeding that is not controlled effectively by direct pressure and dressing
- b. Contraindications:
 - **None when used in the emergency setting**
- c. Special Considerations:
 - Hemostatic agents should be used in conjunction with direct pressure

Occlusive Dressing

- a. Indications:
 - Open wounds to the abdomen, injuries to the neck involving large vessels, and open wound to the chest when an air tight seal is needed to prevent further injury.
- b. Contraindications:
 - None
- c. Special Considerations:
 - For open wounds to the chest frequently monitor the patient for developing a tension pneumothorax

Pelvic Binder

- a. Indications:
 - Stabilization of a known or suspected unstable pelvic fracture
- b. Contraindications:
 - Suspected isolated hip fracture
- c. Special Considerations:
 - Improper placement of a pelvic binder can do more harm than good. Placement should be over the pelvic ring, not the hip.
 - Tighten to anatomic position as overtightening can cause increased bleeding.

Pressure Dressing

- a. Indications:
 - To maintain pressure once direct pressure has controlled external bleeding
- b. Contraindications:
 - None
- c. Special Considerations:
 - None

Traction Splint

- a. Indications:
 - Stabilization of a known or suspected mid-shaft femur fracture
- b. Contraindications:
 - Suspected injury to the knee or close to the knee, hip, pelvis, or lower leg/ankle of injured leg
- c. Special Considerations:
 - **DO NOT** release manual traction until splint is properly placed and holding traction

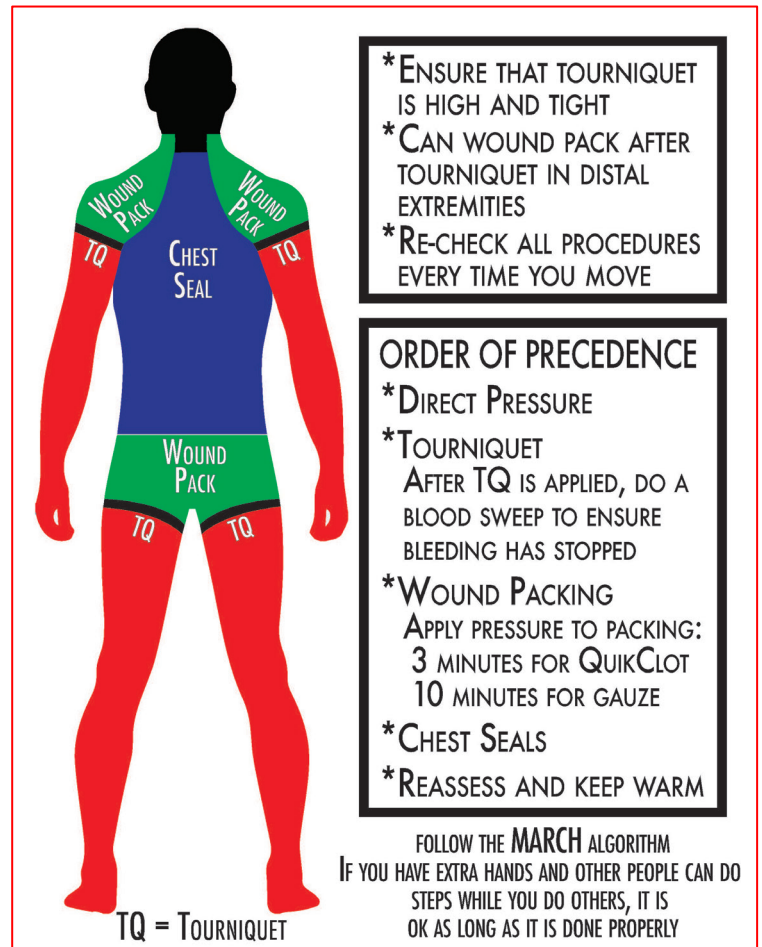
Wound Care Procedures

Tourniquet

- a. Indications:
 - a. Patients with external bleeding in an extremity that is not controlled effectively by direct pressure and dressing
- b. Contraindications:
 - a. None
- c. Special Considerations:
 - a. Be sure to document when, where, and by whom the tourniquet was placed (write time of application on tourniquet or patient)
 - b. **DO NOT** cover tourniquet
 - c. More than one may be needed in addition to the application of the original

Wound Packing

- a. Indications:
 - Large open junctional wounds where packing is needed in conjunction to direct pressure and dressing application
 - i. Axilla, inguinal areas, and extremities
- b. Contraindications:
 - Large wounds to the trunk
- c. Special Considerations:
 - If hemostatic agent gauze is used for wound packing hold direct pressure to the hemorrhaging vessel for 3 minutes
 - If non-hemostatic agent gauze is used for wound packing hold direct pressure to the hemorrhaging vessel for 10 minutes
 - Be aware and cautious of neck wounds.
 - i. Look for cavitation wounds and/or subcutaneous emphysema.
 - ii. If present, apply occlusive dressing.



Miscellaneous Procedures

Provider Level	Gastric Tube Insertion (oral)	Gastric Tube Insertion (nasal)	Suction (upper airway)	Suction (tracheobronchial)	Venous Blood Sampling (Blood Draw)
EMT	NO	NO	YES	NO	NO
EMT-IV	NO	NO	YES	NO	YES
Paramedic	YES	NO	YES	YES	YES

Orogastric Tube Insertion

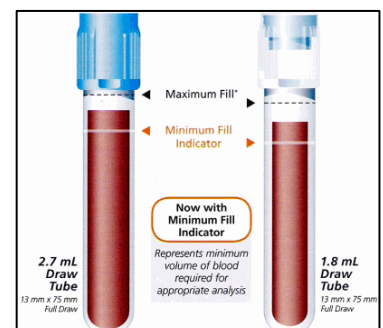
- Indications:
 - Adult and pediatric patients following placement of advanced airway
 - Maintenance of previously placed gastric tube
- Contraindications:
 - Actual or suspected laceration or perforation of the esophagus
 - Ingestion of a caustic substance
- Special Considerations:
 - Anticoagulant use (e.g., Coumadin, warfarin) or disorders of coagulopathy (hemophilia) is a relative contraindication

Suctioning

- Indications:
 - Obstruction of the airway or stoma (secondary to secretions, blood, or any other substance) that need to be cleared
 - Clear secretions, blood, etc. in a patient currently being assisted by an airway adjunct such as an OPA/NPA, endotracheal tube, tracheotomy tube, or cricothyrotomy tube
- Contraindications:
 - None
- Special Considerations:
 - Suctioning, particularly through endotracheal tubes, always risks suctioning the available oxygen, as well as the fluid, from the airway. Limit the suction time to a few seconds while the catheter is being withdrawn.
 - Patients with pulmonary edema may have endless frothy secretions. Be sure to allow time for the patient to breathe, even though it is tempting to continue suctioning.
 - Complications may be caused both by inadequate and overly vigorous suctioning. Technique and choice of equipment are very important. Choose equipment with enough power to suction large amounts rapidly to allow time for ventilation.

Blood Draw (Non-Law)

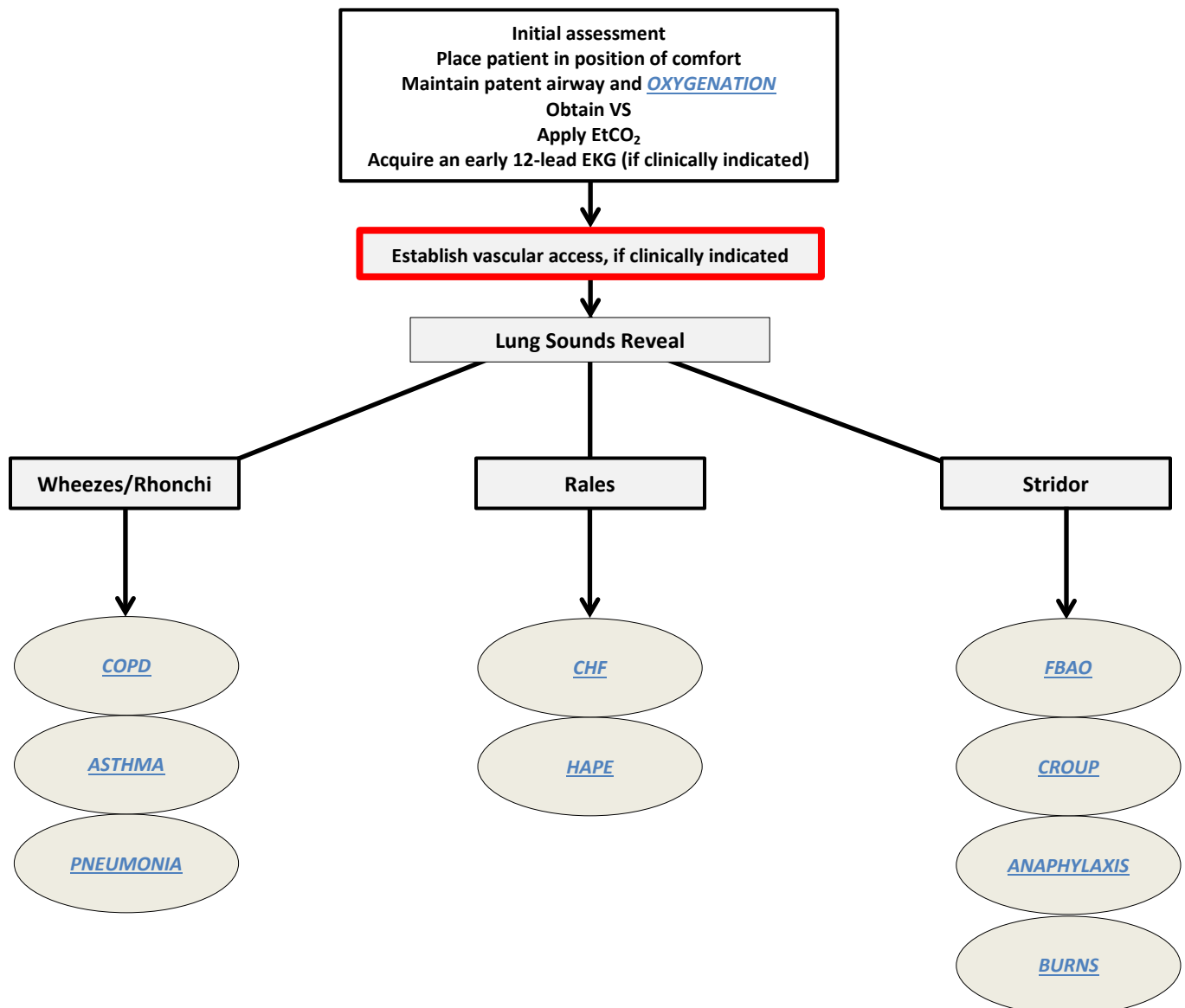
- Indications:
 - Blood sampling should be considered in any patient where lab testing would be medically beneficial.
- Contraindications:
 - None
- Special Considerations:
 - DO NOT** delay time sensitive treatments or transport in order to attain blood sampling.
 - Avoid areas with cellulitis, hematomas, vascular shunt/graphs, and/or vascular access devices.
 - Order of blood draw: **RED, BLUE, GREEN, LAVENDER**
 - Ensure the **BLUE** tube has been filled to marker line.



Standard Dyspnea Care

Description

- Causes of respiratory distress can be numerous, making the assessment and treatment difficult. This guideline is designed to create a simplified and standard treatment algorithm.
- The goal is to maximize both oxygenation and ventilation without causing hyperoxemia.
- Lungs sounds in conjunction with EtCO₂ and SpO₂ are crucial during the assessment and are **REQUIRED** on every respiratory distress patient.
- There are many non-pulmonary causes of dyspnea. If clear lung sounds are present, consider other causes such as: pulmonary embolus, myocardial infarction, carbon monoxide, and/or anxiety.
- If certified, consider rapid sequence intubation (RSI) in any patient experiencing dyspnea **WITH** imminent respiratory failure or respiratory arrest.
- For pediatrics, reference Pediatric Field Guide



Wheezes/Rhonchi

ALBUTEROL NEB: PRN every 10 minutes

- **ADULT and PEDIATRIC** >2: 2.5 mg in 3 mL NS
- **PEDIATRIC** <2: 1.25 mg in 3 mL NS

Consider (severe cases)

CONTINUOUS NEB

- **ADULT:** 7.5 mg of **ALBUTEROL** in 9 mL via neb
- **PEDIATRIC:** NOT allowed

Establish vascular access

Patient Condition Improved

YES

A

General supportive care

NO

ATROVENT: PRN every 15 minutes

- **ADULT:** 0.5 mg in 3 mL via neb
- **PEDIATRIC:** 0.25 mg in 3 mL via

Consider CPAP

- **ADULT:** see [CPAP GUIDELINE](#)
- **PEDIATRIC:** see [CPAP GUIDELINE](#)

If patient Condition Improved, continue to **BOX A**

NO

Asthma

COPD

EPINEPHRINE 1:1,000: PRN every 3-5 minutes

- **ADULT:** 0.3 mg (0.3 mL) IM
- **PEDIATRIC:** 0.01 mg/kg (0.01 mL/kg) IM

DEXAMETHASONE: NOT repeated

- **ADULT:** 10 mg IV/IO/IM/PO
- **PEDIATRIC:** 4 mg IV/IO/IM/PO

If patient Condition Improved at Any time, continue to **BOX A**

Consider (If no improvement)

MAGNESIUM SULFATE: NOT repeated

- **ADULT:** 2 grams in 50 mL NS or D₅W IV/IO over 10 minutes
- **PEDIATRIC:** 50 mg/kg in 50 mL NS or D₅W IV/IO over 10 minutes

Consider PPV with BVM & adjuncts

Consider: Severe Cases

EPINEPHRINE INFUSION

- **ADULT and PEDIATRIC:** 1 mg Epinephrine in a 1,000 mL NS or 0.5 mg in 500 mL NS, IV/IO infusion wide open to gravity
 - Continuously reassess BP until titrated effect
 - BP > 90 systolic ([≥ Peds Guide recommendation](#)), and/or return of distal pulses, and/or improved mental status

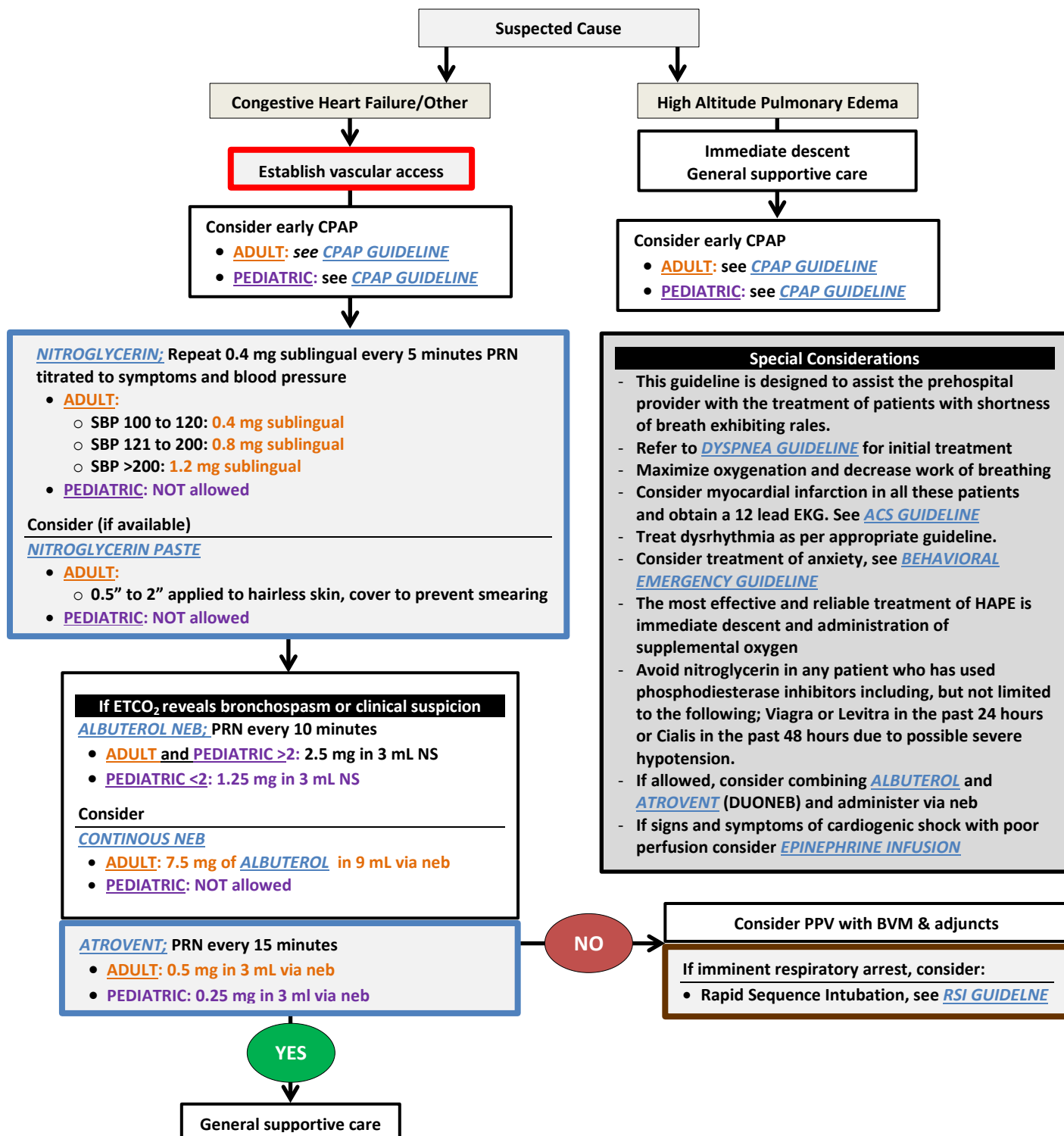
Consider: If imminent respiratory arrest

- Rapid Sequence Intubation (if allowed)
- Consider **KETAMINE** as the induction agent

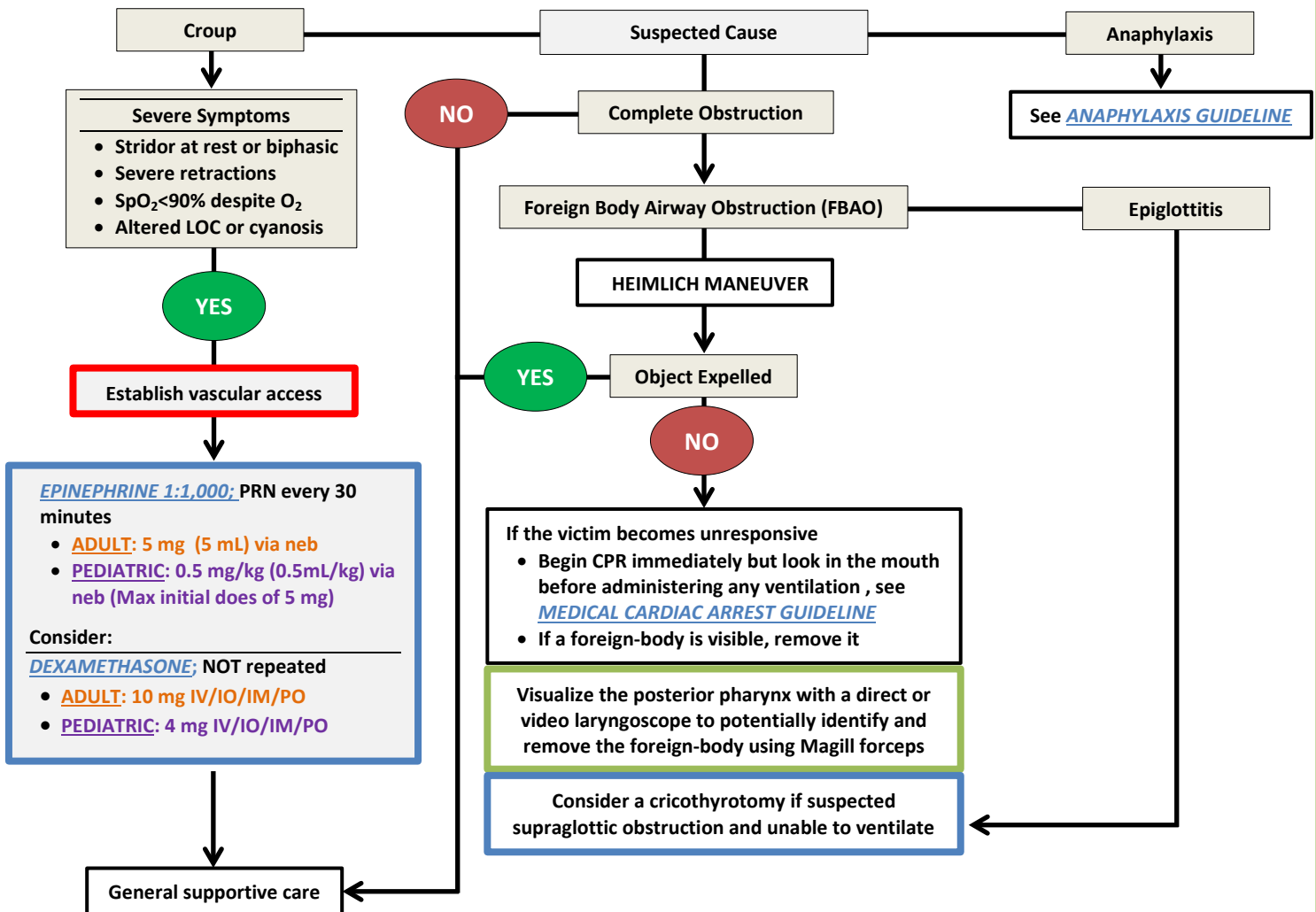
Special Considerations

- This guideline is designed to assist the prehospital provider with the treatment of patients with shortness of breath exhibiting wheezes/rhonchi.
- IM epinephrine is only indicated for most severe attacks & not responding to inhaled bronchodilators. Use extreme caution when administering. Cardiopulmonary monitoring is mandatory
- IV magnesium may be beneficial in some patients with status asthmatics & should not be given routinely, but should be reserved for life-threatening attacks NOT responding to conventional therapy
- Wheezing may be a presentation of pulmonary edema, "cardiac asthma" if suspected see [RALES GUIDELINE](#)
- If fever present and high suspicion of pneumonia, avoid steroid administration
- If allowed, consider combining **ALBUTEROL** and **ATROVENT** (DUONEB) and administer via neb

Rales



Stridor/FBAO



Special Considerations

- This guideline is designed to assist the prehospital provider with the treatment of patients with shortness of breath exhibiting stridor
- Causes of stridor include the following but are not limited to; croup, foreign body obstruction, allergic reactions, trauma, infection, and masses
- Do not perform blind finger sweep in the mouth and posterior pharynx
- For visibly pregnant or obese patients perform chest thrusts
- Epiglottitis is rare, but should be considered in unimmunized children and immunized adults. Keep patient calm and minimize agitation. Airway manipulation is best done in the facility. Prepare for emergency cricothyrotomy

Receiving Facility Capability						
Check Availability with EMResource						
Condition	PMC	SFMC	MC	MN	GV	CH
NON-STEMI	A/P	A/P	A/P	A/P	A	P
STEMI	A/P	A/P	A/P	A/P	X	P
A=Adult, P=Pediatric X=Does not accept						

Acute Coronary Syndrome

Description

- This guideline is designed to assist the prehospital provider with the treatment of patients with acute coronary syndrome.
- There are many signs and symptom of ACS, however it is only one part of the decision making process in regards to activating a cardiac alert.
- When activating a cardiac alert, the goal is to identify a patient with ST-segment elevation myocardial infarction (STEMI) in the prehospital setting, and to provide advanced notification to the receiving facility in order to minimize delay to definitive care.

Cardiac Alert Inclusion Criteria

- Chest discomfort consistent with ACS **AND**
- 12-lead ECG showing
 - ST-segment elevation (STE) of at least 1 mm in two or more anatomically contiguous leads, **or**
 - 2 mm ST depression or greater in V1-V2 (posterior), **or**
 - 12-Lead ECG computer interpretation of "ACUTE MI" **or**
 - Modified Sgarbossa's Criteria (if LBBB present) shows;
 - Concordant ST-segment elevation ≥ 1 mm in any lead
- If unsure if patient is appropriate for Cardiac Alert, discuss with receiving facility physician

Cardiac Alert Treatment

- Treat according to the ACS guideline en route
- Notify receiving hospital ASAP with ETA and request **CARDIAC ALERT**
 - Do not delay hospital notification. If possible, notify ED before leaving scene
- EKG transmission (if available)
 - Utilize Pulsara application, if available
- Attach defibrillation pads for precautionary measures
- Rapid transport to appropriate facility
- If patient does not meet inclusion criteria, yet clinical scenario and ECG suggests STEMI, request medical consult with receiving facility.

Documentation Requirements

- Time of first patient contact
- Time of first EKG
- Attach EKG to ePCR
- Complete serial 12 leads, if time allows

Special Considerations

- Suspicion of an acute MI is based on a complete assessment and history. **DO NOT** be reassured by a "normal" monitor strip. Conversely, "abnormal" strips (particularly ST and T changes) can be due to technical factors, lead placement, and/or non-acute cardiac diseases.
 - Any changes **SHOULD** be documented and relayed to physician on arrival at ED
- Consider causes other than cardiac for chest pain - pulmonary embolus, dissecting aneurysm, pneumothorax, pneumonitis, etc.

Acute Coronary Syndrome

Receiving Facility Capability						
Check Availability with EMResource						
Condition	PMC	SFMC	MC	MN	GV	CH
NON-STEMI	A/P	A/P	A/P	A/P	A	P
STEMI	A/P	A/P	A/P	A/P	X	P

A=Adult, P=Pediatric X=Does not accept

Special Considerations

- Assess lung sounds prior to administering fluid to any patient at high risk for CHF
- Treat any dysrhythmias per specific guideline
- Consider right sided and/or posterior 12-lead EKG's

Initial assessment
Positive findings of ACS signs/symptoms
Maintain patent airway and OXYGENATION
Acquire VS & early 12-lead EKG

ASPIRIN; NOT repeated
• **ADULT**: 162 to 324 mg tablets
• **PEDIATRIC**: NOT allowed

STEMI

YES

NO

Activate Cardiac Alert

Establish Vascular Access

Signs and symptoms of poor perfusion

YES

NO

FLUID THERAPY; PRN until systolic BP between 80-100
• Challenge: 250 to 500 mL NS IV/IO

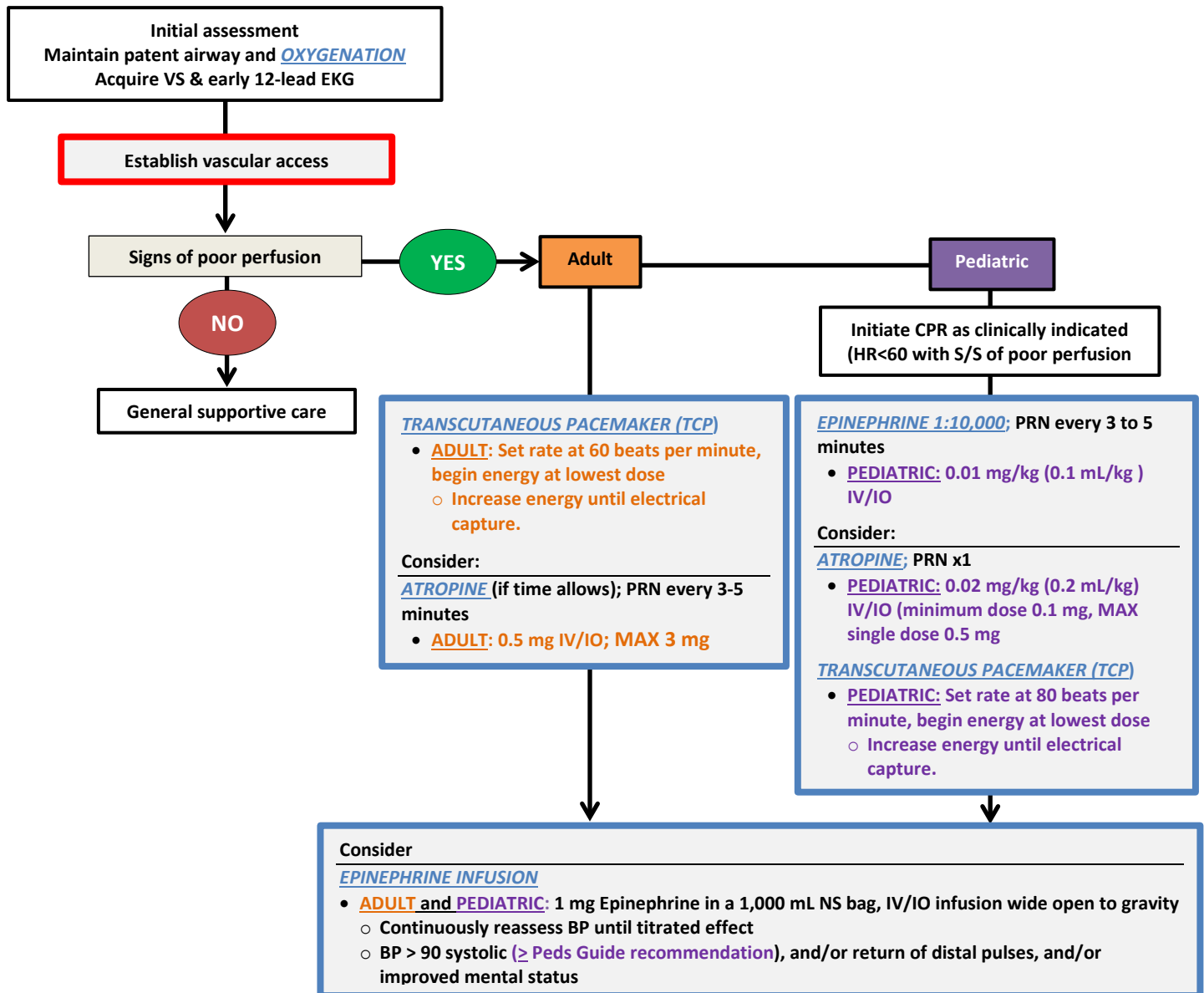
Consider PAIN MANAGEMENT

Consider

EPINEPHRINE INFUSION

- **ADULT** and **PEDIATRIC**: 1 mg Epinephrine in a 1,000 mL NS or 0.5 mg in 500 mL NS, IV/IO infusion wide open to gravity
 - Continuously reassess BP until titrated effect
 - BP > 90 systolic (> Peds Guide recommendation), and/or return of distal pulses, and/or improved mental status

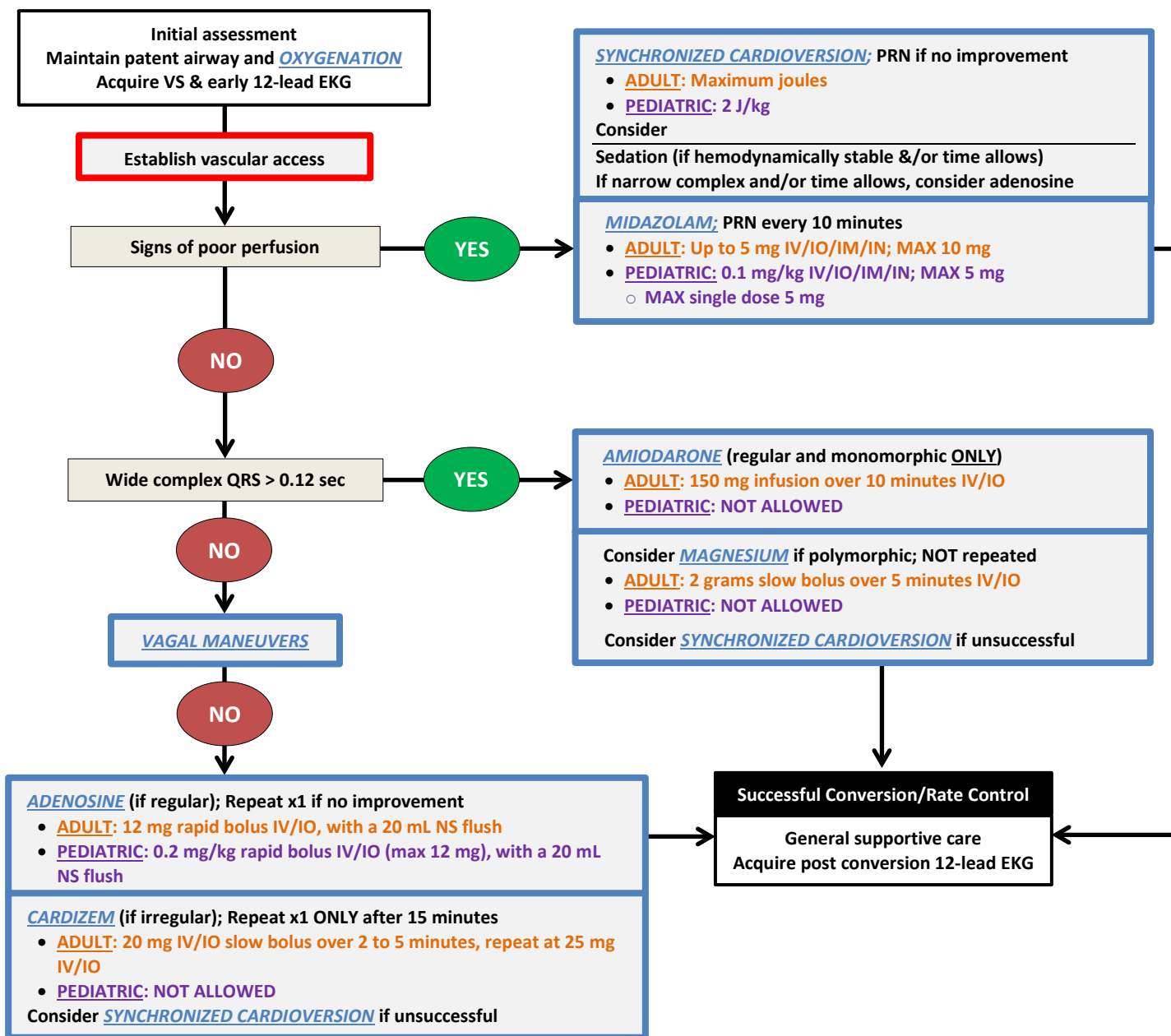
Bradydysrhythmias



Special Considerations

- This guideline is designed to assist the prehospital provider with the treatment of patients with bradycardia.
- Consider epinephrine infusion early if poor perfusion or hypotension persists after TCP
- Once stable, consider PAIN MANAGEMENT GUIDELINE
- Symptomatic and severe bradycardia is typically related to:
 - Ischemia
 - Medications (beta blocker, calcium channel blocker)
 - Electrolytes (hyperkalemia)
- Capture thresholds in children are similar to those in adults
- In pediatrics, identify and treat any potential respiratory etiologies
- If stable and there is a 2nd degree type 2 or 3rd degree AV block, attach pacer pads and be prepared for transcutaneous pacing

Tachydysrhythmias



Special Considerations

- This guideline is designed to assist the prehospital provider with the treatment of patients with tachycardia
- Amiodarone is NOT recommended for monomorphic IRREGULAR wide complex tachycardias. If stable, SUPPORTIVE CARE ONLY
- Consider contacting Medical Control for direction if conversion is unsuccessful
- Chronic atrial fibrillation is rarely a cause of hemodynamic instability, especially if rate is < 150 bpm. First correct hypoxia and/or hypovolemia, before considering cardioversion.
- Sinus tachycardia rarely exceeds 150 bpm in adults; or 220 bpm in children < 8 years and does not require or respond to cardioversion, treat underlying causes.
- Consider MAGNESIUM for Torsade's De Pointes with a pulse

Cardiac Arrest (medical)



General Electrotherapy Guidelines

- Analyze/assess and defibrillate rhythm ASAP, if indicated
- For pediatrics, reference Pediatric Field Guide
- Use maximum energy setting when defibrillating
- EMTs and AEMTs use AED or heart monitor in AED mode
- If cardiac arrest patient has an implantable cardioverter defibrillator (ICD) or pacemaker: place pacer/defibrillator pads at least 1 inch from device. Biaxillary or anterior posterior pad placement may be used.

General Chest Compressions Guidelines

- For best practices, minimize interruptions, resume compressions immediately after shocks, or rhythm checks. Check pulses **ONLY** if organized rhythm is identified.
- Push hard and fast (100-120 compressions per minute) and allow complete chest recoil
- Assess quality of CPR with continuous waveform capnography, if EtCO₂ < 10, reassess quality of compressions
- If using automated CPR devices, follow manufacturer's specifications
- In pediatrics, compression depth **SHOULD** be 1/3 of anteroposterior chest diameter.
- Left-lateral tilt is used to improve maternal hemodynamics during cardiac arrest; the degree of tilt should be at a tilt ≥30° or manually displace the uterus.
 - Performed from either the patient's left side with the 2-handed technique or the patient's right side with the 1-handed technique.

General Airway Management Guidelines

- Passive Ventilation:** Open the airway; place NPA/OPA, place NRB facemask with O₂ at 15 L/min for or place I-Gel and attach passive O₂ port to O₂ at 8 L/min for first **3** cycles of chest compression.
 - If time allows, **AND** there are appropriate resources, **AND** interruptions of chest compressions can be limited, consider endotracheal intubation after the 1st 3 cycles and/or if I-Gel is not working.
- Positive Pressure Ventilation:** If hypoxic arrest suspected (e.g. asphyxiation, status asthmaticus), begin ventilations immediately.
 - An advanced airway (King, LMA, I-Gel, ETT) **WITH** positive pressure ventilation can be placed any time **if asphyxial** arrest suspected.
 - Placement **SHOULD NOT** interrupt compressions and ventilatory rate **SHOULD** be at 10 BPM

Return of Spontaneous Circulation (ROSC)

- Following ROSC, several simultaneous interventions must be performed to optimize care and maximize patient outcome.
- Survival and neurologic outcome worsen with fever, hypoxia, hypo/hypercapnia, and hypotension. Post-ROSC care should focus on prevention of these elements.
- Make sure to document;
 - Time of arrest (or time last seen normal)
 - Witnessed vs. unwitnessed arrest
 - Initial AED rhythm: shockable vs. non-shockable
 - Bystander CPR provided including how long
 - Time and GCS of ROSC
 - If time allows complete a post arrest/ROSC 12-lead

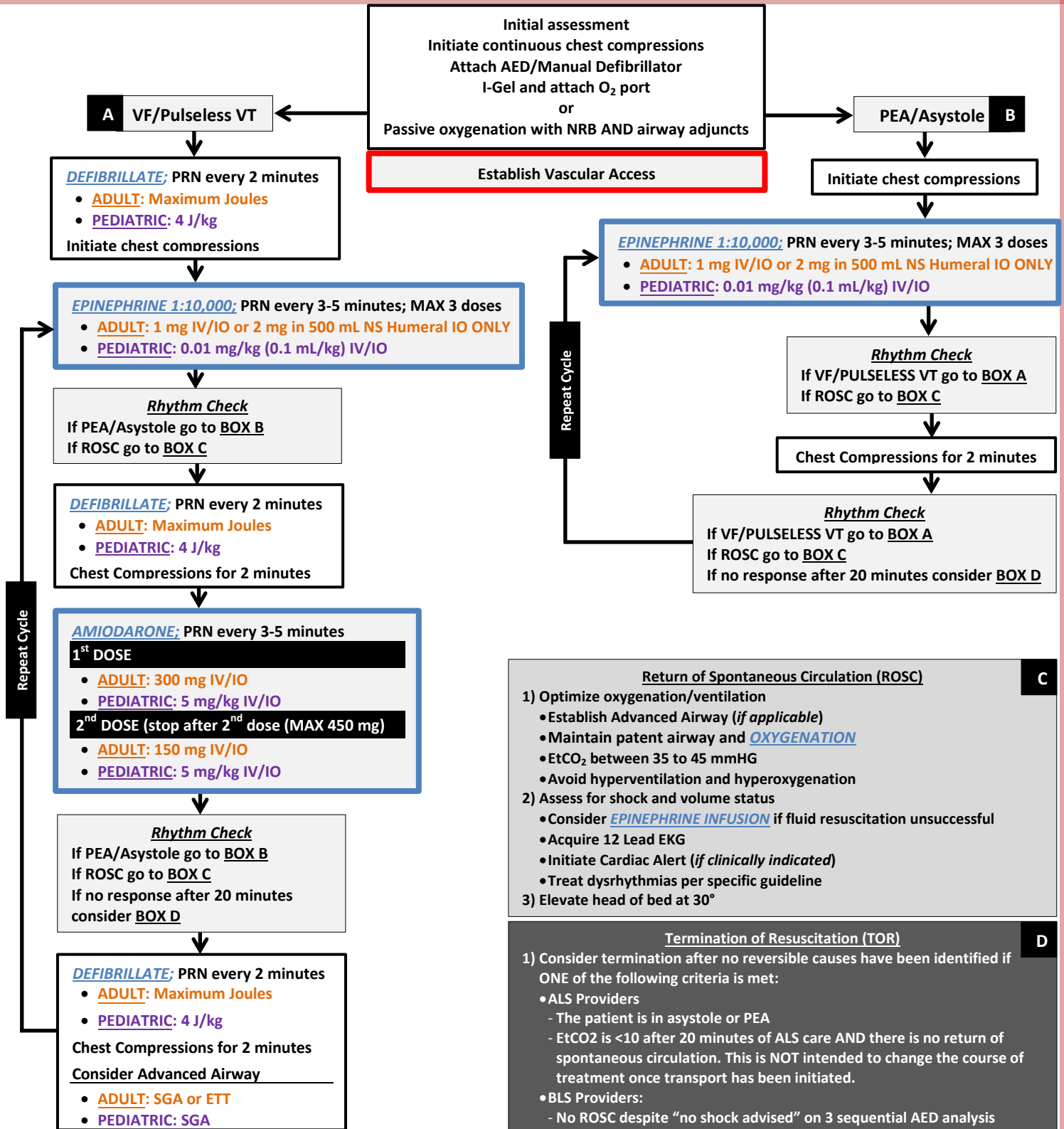
General Environment Guidelines

- CPR in a moving ambulance or on a cot is ineffective and is not recommended to transport patients to a facility without a pulse.
 - In general, work cardiac arrest on scene either to ROSC, or the field pronouncement, see [DEATH in the FIELD GUIDELINE](#).
- Look for early identifiable and/or reversible causes
- Family presence during resuscitation is preferred by most families, it is rarely disruptive, and may help in the grieving process for family members. Family presence during resuscitation is recommended, unless disruptive to resuscitation efforts.

General Medication Guidelines

- In suspected hyperkalemic arrest, consider early administration of [CALCIUM](#) and [SODIUM BICARBONATE](#)
- Consider [MAGNESIUM](#) for polymorphic VT/Torsades De Pointes
- Epinephrine alternative: 2 mg in 500 mL NS bag wide open on an pressure infusion pump (BP cuff at 300 mmHG) through a humeral head IO site **ONLY** for patients >13 years old. **MAX** of epinephrine is 3 mg for the entire arrest cycle.

Cardiac Arrest (medical)



Neonatal Resuscitation



Description

- This guideline is designed to assist the prehospital provider with the delivery of the newborn and neonatal resuscitation.

History and Presentation

- History of mother: age, due date, prenatal care, previous pregnancies and problems, high risk, medications, duration of labor, foul-smelling or stained amniotic fluid, possibility of twins.
- If baby is **NOT** delivered and head is **NOT** appearing at vaginal opening with contractions, transport rapidly and consider stopping the ambulance for delivery as clinically indicated.
- If baby is not delivered, but head visible with contractions (crowning), delivery is imminent.

Special Considerations

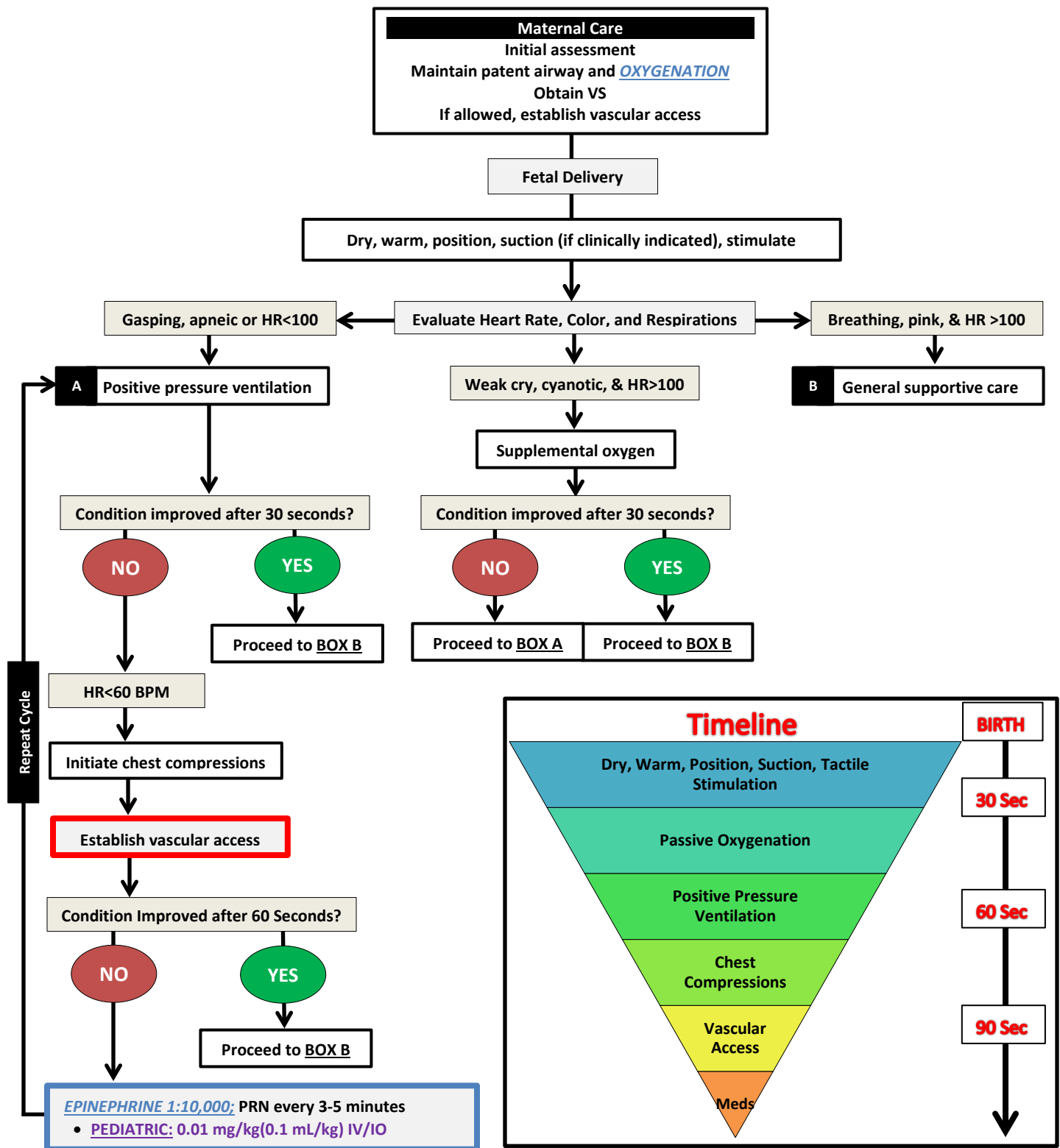
- The decision to progress beyond initial steps is based on an assessment of respirations (apnea, gasping, labored, or unlabored breathing) and heart rate ($>/< 100$ bpm)
- Assist ventilations at a rate of 40-60 breaths per minute to maintain HR > 100 and use 2 person BVM when possible
- For CPR, 2 thumbs-encircling hands technique preferred
 - Allow full chest recoil
 - 3:1 ratio for compressions to ventilations, with 90 compressions and 30 breaths per minute, to achieve 120 events per minute.
- Coordinate with ventilations so chest compressions are **NOT** delivered simultaneously
- Consider, hypoglycemia, hypovolemia and pneumothorax
- Suction is **ONLY** indicated when there is an obvious obstruction to spontaneous breathing or those requiring positive-pressure ventilation.
- Neonatal resuscitation, unlike most other resuscitation situations, requires careful attention to temperature.
- When needed to establish vascular access in the, immediate interosseous (IO) access is preferred, then later if needed obtain a peripheral IV access site.
 - NO pressure infusion bag recommended for infant IO access, instead use manual pressure for administration of medications.

APGAR

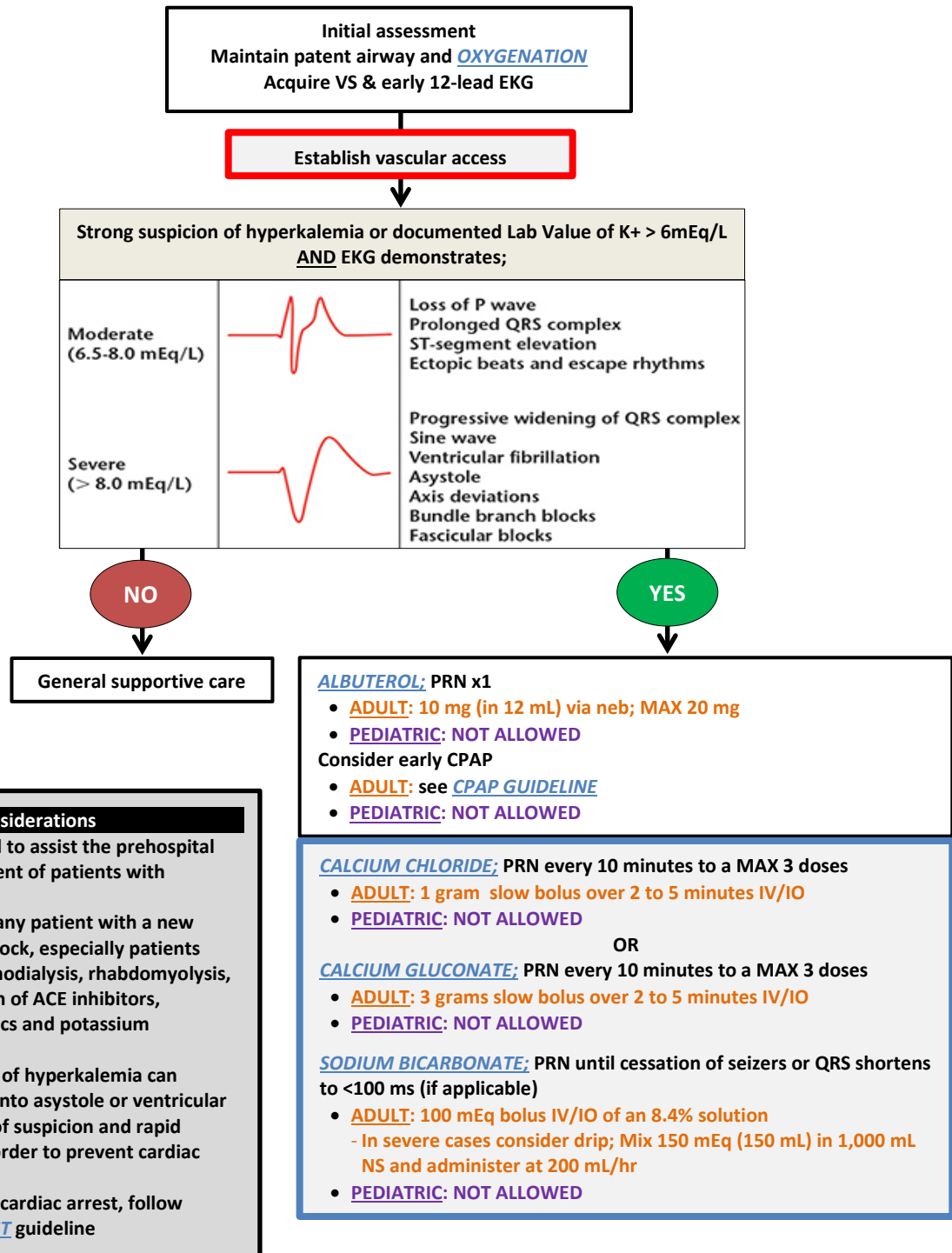
- Document APGAR score at 1 and 5 minutes
- APGAR Scoring Chart

Indicator		0 Point	1 Point	2 Point
A	Activity (muscle tone)	Absent	Flexed arms and legs	Active
P	Pulse	Absent	< 100 BPM	>100 BPM
G	Grimace (reflex irritability)	Floppy	Minimal response to stimulation	Prompt response to stimulation
A	Appearance (skin color)	Blue; pale	Pink body, blue extremities	Pink body and extremities
R	Respiration	Absent	Slow and irregular	Vigorous cry

Neonatal Resuscitation



Hyperkalemia



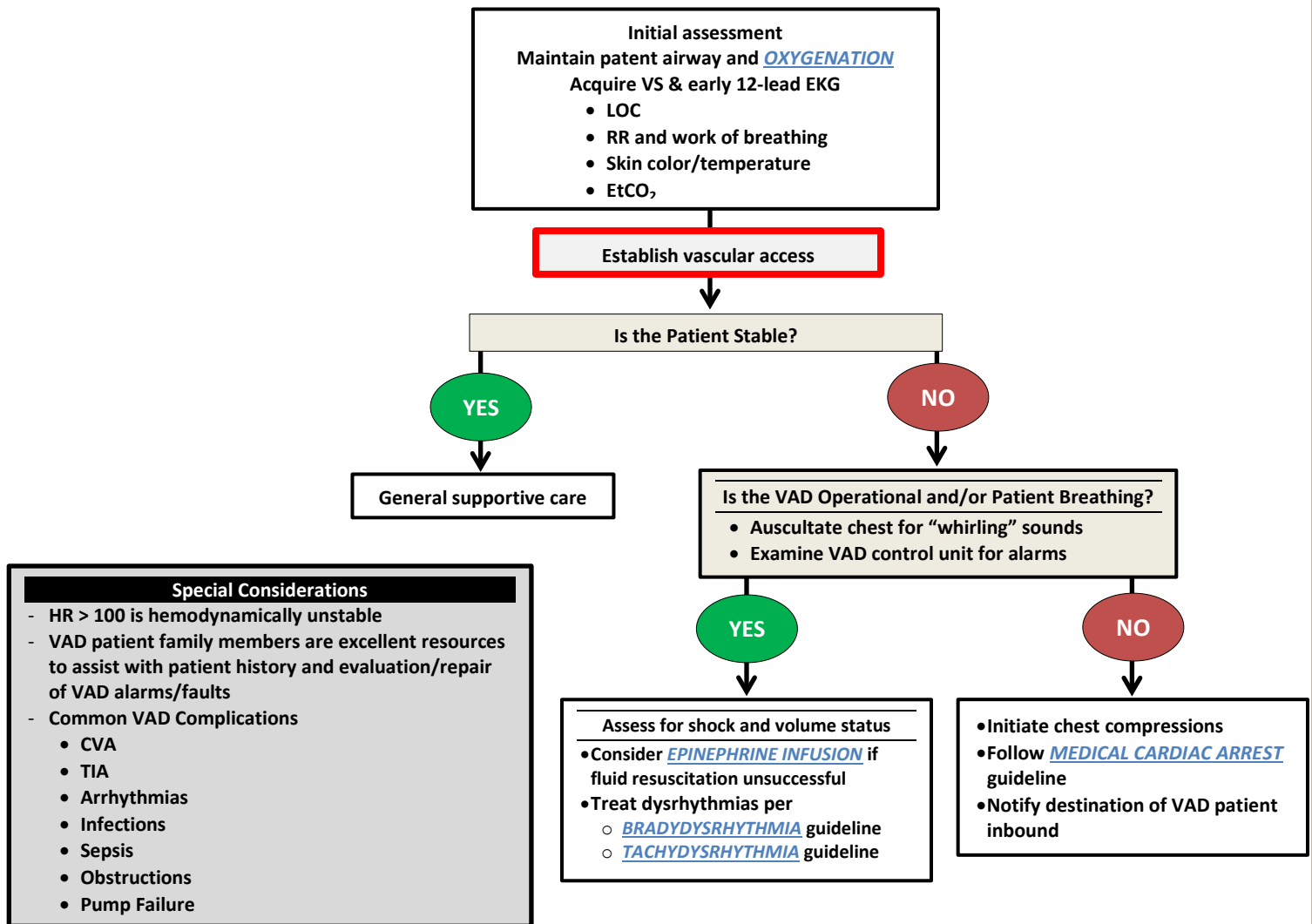
Special Considerations

- This Guideline is designed to assist the prehospital provider with the treatment of patients with suspected hyperkalemia.
- Suspect hyperkalemia in any patient with a new bradyarrhythmia or AV block, especially patients with renal failure, on hemodialysis, rhabdomyolysis, or taking any combination of ACE inhibitors, potassium-sparing diuretics and potassium supplements.
- Untreated, severe, states of hyperkalemia can suddenly decompensate into asystole or ventricular fibrillation. A high index of suspicion and rapid treatment is required in order to prevent cardiac arrest.
- If patient progresses into cardiac arrest, follow MEDICAL CARDIAC ARREST guideline

Ventricular Assist Devices

Description

- This guideline is designed to assist the prehospital provider with the treatment of patients with a ventricular assist device.
- A Ventricular Assist Device (VAD) is a mechanical device used to support circulation in a patient with significant ventricular dysfunction.
 - The Left Ventricular Assist Device (LVAD) is typically used to support the left ventricle and provide additional cardiac output.
 - This device can be placed short term to bridge patients until they can receive a heart transplant or long term for people who are not candidates.
 - LVAD patients can be identified by an electric driveline cable that comes directly out of their abdomen and connects to an external control pack powered by two external batteries they will be wearing with a bag, harness or vest. The patient still has underlying heart function and rhythm that can be assessed and treated as appropriate per guidelines.
 - Typically, LVAD patients have no discernible pulse. Blood pressure measurement requires manual BP cuff and Doppler, therefore utilize other parameters for patient assessment (see below).



Behavioral Emergency



Description

- a. This guideline is designed to assist the healthcare provider with the assessment and treatment of those with behavioral emergencies.
- b. Agitation is an “excess of one or more behaviors that occurs throughout an altered state of consciousness” (Bogner & Corrigan, 1995). Like other conditions, agitation has a continuum of severity and should be managed appropriately. Mild to moderate agitation should be managed with benzodiazepines, while extreme agitation is viewed as a potential medical emergency and should be managed with [KETAMINE](#).
 - Mild to Moderate: Nonviolent presentation where verbal calming/coaching is ineffective such as anxiety.
 - Extreme agitation: A patient who demonstrates poor impulse control, aggressive excitement, non-purposeful movements, and/or unrelenting violent/disruptive behavior **AND** has the potential for/or requires physical restraint.
- c. Respect the dignity and privacy of the patient, the establishment, and all those involved with the scene
- d. Assure physical safety of the EMS personnel, the patient, and all on scene
- e. Use reasonable physical restraints **ONLY** if attempts of verbal control are unsuccessful
 - Police should be on scene for scene safety, when possible
- f. Consider medical complications that cause irrational behavior such as closed head injury (CHI), diabetes, ETOH, etc.
- g. If a patient has an isolated mental health complaint (e.g. suicidal), and does not have a medical complaint or need specific medical intervention, then that patient may be appropriately transported by law enforcement or other appropriate secure transport agency according to their guidelines.

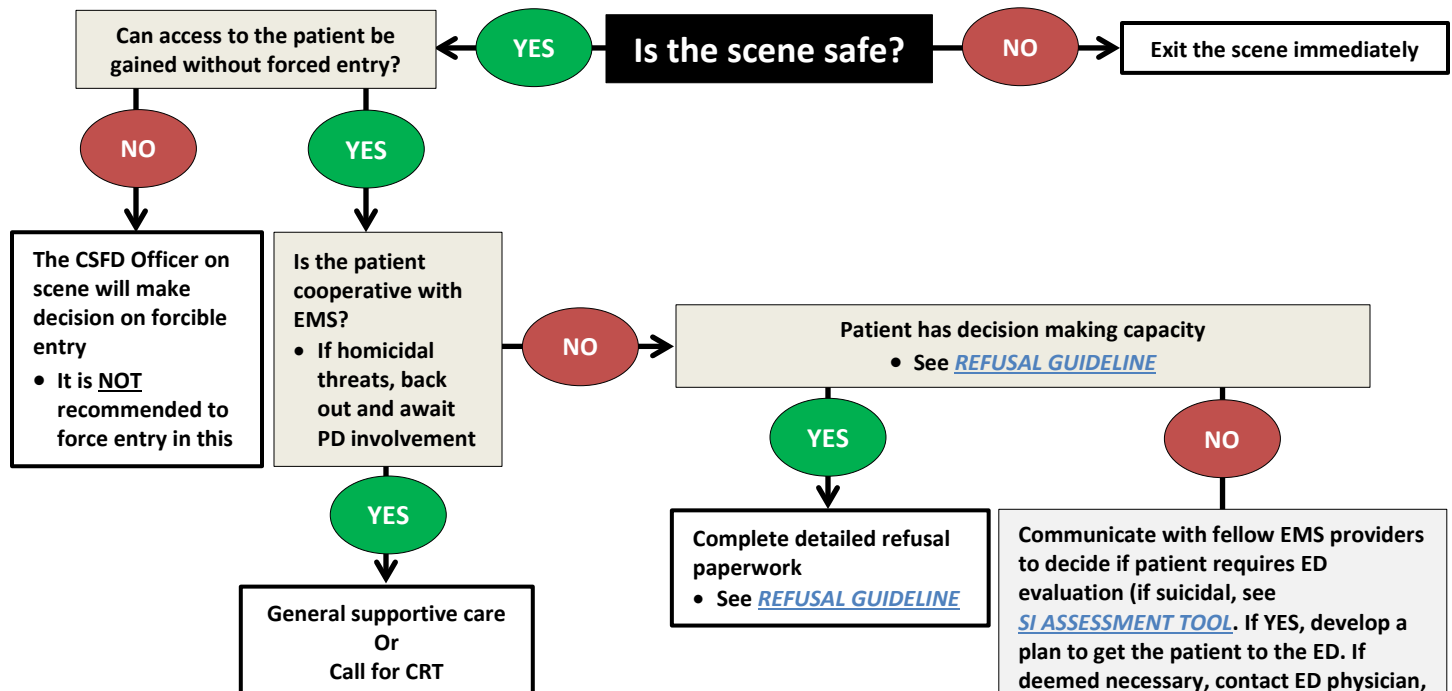
Initial Approach

- a. Communicate in a calm, non-derogatory, and non-threatening manner
- b. Clearly identify yourself as a MEDICAL PROVIDER and offer assistance
- c. If not done earlier, contact law enforcement if the person is a threat to themselves or others

Special Considerations

- a. Respect the dignity and privacy of the patient, the establishment, and all those involved with the scene
- b. Assure physical safety of the EMS personnel, the patient, and all on scene
- c. Consider medical complications that cause irrational behavior such as closed head injury (CHI), diabetes, ETOH, etc.
- d. If a patient has an isolated mental health complaint (e.g. suicidal), and does not have a medical complaint or need specific medical intervention, then that patient may be appropriately transported by law enforcement according to their guidelines.
- e. Constantly monitor patient, vital signs, and airway to prevent injury, aspiration, or harm
- f. Carefully and thoroughly document the restraint rationale and type, reevaluations, all persons involved including PD, any injury to the patient or provider, as well as patient condition upon hospital transfer of care.
- g. All individuals being transported with handcuffs **SHOULD** be accompanied by a police officer. If not possible, request that police follow behind the ambulance so as to be readily available to remove handcuffs if needed.
 - EMS Personnel are **NOT** allowed to use handcuffs
- h. In those situations where a female patient is being transported and a female is not part of the crew, the provider should attempt to have a female police officer accompany the patient to the hospital. Same goes for a male patient.
 - Consider documenting the beginning and ending mileage with dispatch via radio communication
- i. Always consider these patients dangerous and be cognitive of hidden weapons
 - Request law enforcement to search for weapons
- j. Be aware of potential complications of preexisting medical conditions with the application of restraints such as obesity, ACS, diabetes etc.

Behavioral Emergency



Special Considerations

- Consulting Medical Control is always an option, but NOT required. This guideline provides a standing order allowing prehospital providers to use collective judgment to force (including physical and chemical restraints) a patient to be brought into the ED against his/her will. If the collective judgment, for the patient *with decision making capacity*, is that forceful transport would reasonably cause harm to EMS/Fire personnel than the standing order allows EMS/fire personnel to leave the patient in place.
- Be aware that consulting a Medical Control physician MAY provide you with a "suggestion" for the patient to receive emergent evaluation BUT DOES NOT equate to a mental health hold (M1)
- Not every scenario will fit perfectly into this algorithm. Please take into account external factors that may be influencing the patient's decision making capabilities like drugs, ETOH, or psychiatric disorders.
- CRT (Community Response Team)
 - o CRT1: Monday-Thursday, 1000-1900: Cell: 719-493-0654
 - o CRT2: Friday-Monday, 1000-1900 Cell: 719-499-6042
 - o CRT3: Monday-Thursday, 1400-2300 Cell: 719-619-9728

Suicidal Ideation Assessment Tool

- | | |
|---|--|
| 1 | Wish to be dead, nonspecific active suicidal thoughts without a plan or intent to act |
| 2 | Active suicidal ideation with specific plan and intent |
| 3 | Preparatory acts (plan, telling friends, writing letters, giving away belongings etc.) |
| 4 | Actual, aborted or interrupted attempt |

Lower Risk

May leave in place with handout, see [REFUSAL GUIDELINE](#)

Higher Risk

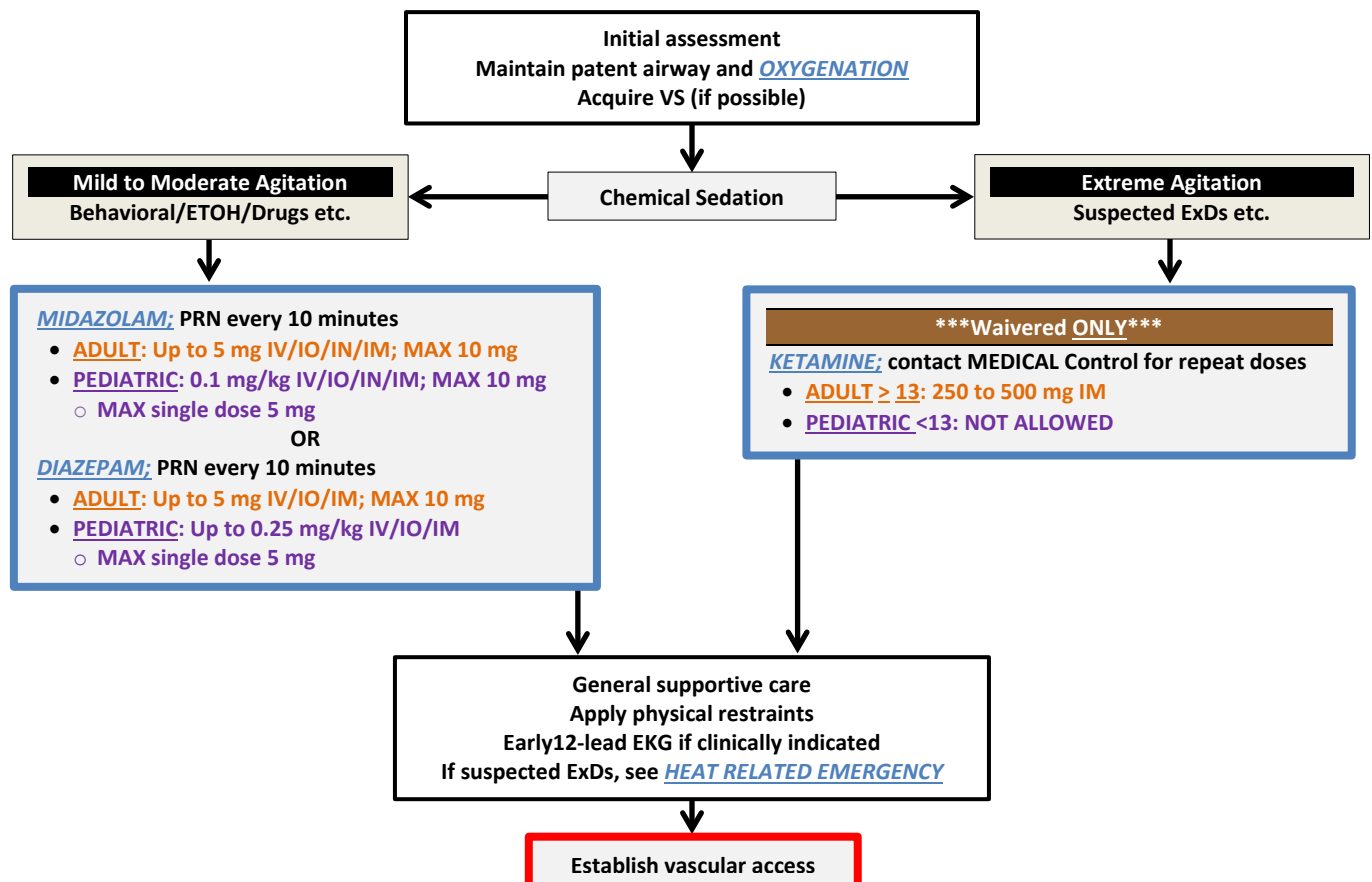
High consideration of transport, if CRT unavailable

Behavioral Emergency

Indications (Physical Restraints)

- a. Restraints may be indicated for patient who meet the following criteria:
 - Significant impairment (e.g. intoxication, medical illness, injury, psychiatric condition, etc.) and lacks decision-making capacity regarding his or her own care).
 - Exhibits violent, combative or uncooperative behavior who does not respond to verbal de-escalation
 - Considered to be a risk for behavior dangerous to others or healthcare providers
- b. Special Considerations
 - Use reasonable physical restraints **ONLY** if attempts of verbal control are unsuccessful
 - i. Police should be on scene for scene safety, when possible
 - Use standard accepted restraining techniques including commercial restraints if possible
 - Have all equipment and personnel ready (restraints, suction, a means to promptly remove restraints)
 - Use assistance such that, if possible, 1 rescuer handles each limb and 1 manages the head or supervises the application of restraints.
 - Apply restraints to the extent necessary to allow treatment of, and prevent injury to, the patient
 - i. Lack of or weak restraint may place patient and others at greater risk
 - Assess all limbs for sensory and motor function in addition to circulation post restraints
 - A restrained patient may never be left unattended
 - Hobble restraints are **NOT ALLOWED** and the patient **MUST NEVER** be restrained in the prone position

Chemical Sedation



Cerebral Vascular Accident

Receiving Facility Capability						
Check Availability with EMResource						
Condition	PMC	SFMC	MC	MN	GV	CH
CVA	A	A/P	A/P	A/P	A	P
CSTAT ≥ 2	A	X	A/P	X	X	P
A=Adult, P=Pediatric X=Does not accept						

Description

- This guideline is designed to assist the prehospital provider in navigating the treatment of a patient with suspected stroke.

Stroke Screening

- Utilize the BE-FAST stroke screening in conjunction with a neurological assessment to help identify a potential stroke.
- If there are any positive findings during the exam, consider a stroke alert.
 - B**alance: Is the person experiencing a sudden loss of balance or coordination?
 - E**yes: Is the person having a sudden change in vision or trouble seeing, or abnormal pupils?
 - F**ace: Does one side of the face droop?
 - A**rms: Does one arm drift?
 - S**peech: Is their speech slurred or strange?
 - T**ime: What time did symptoms begin? When was patient last known well?

Stroke Severity

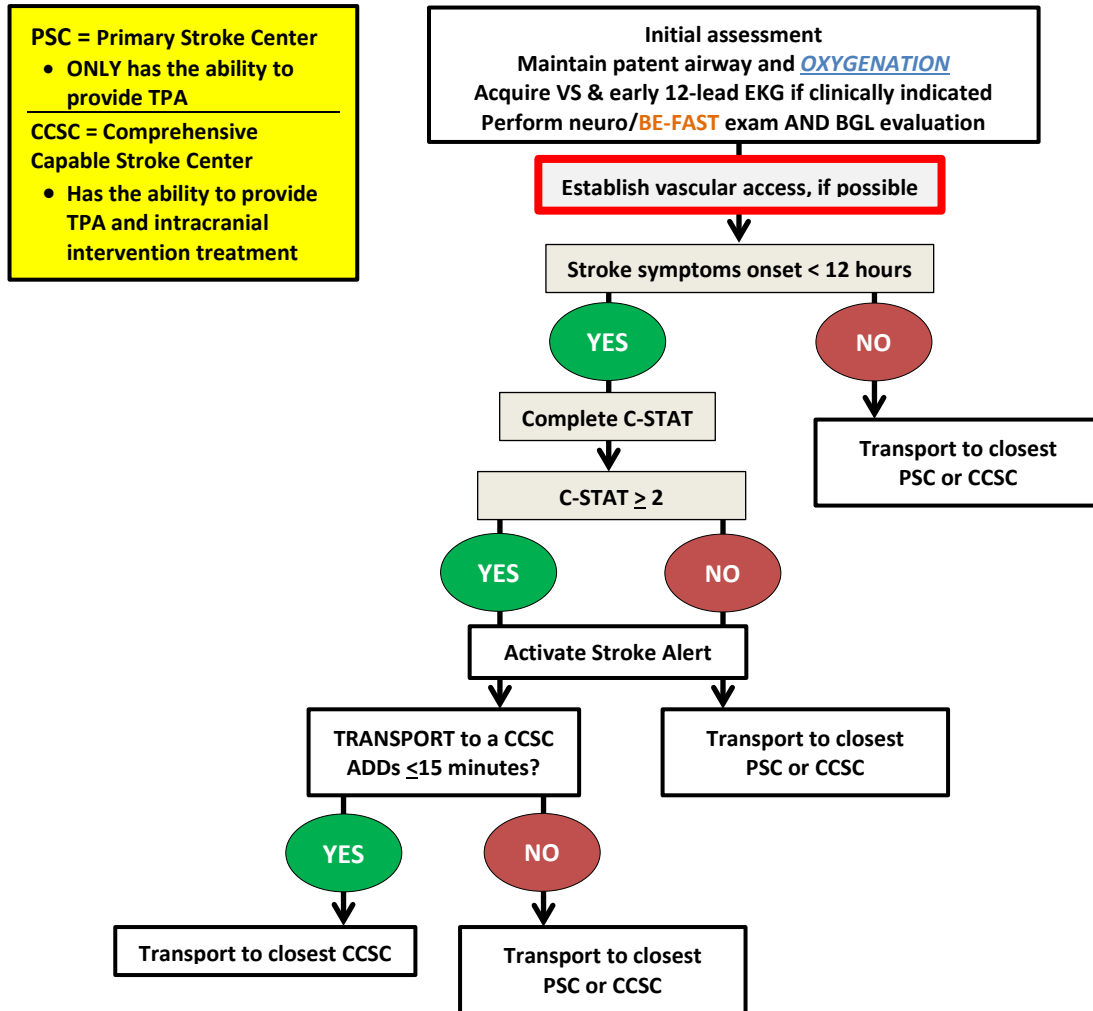
- The Cincinnati Stroke Triage Assessment Tool (C-STAT, formerly known as the Cincinnati Prehospital Stroke Severity Scale) assigns patients a value from 0 to 4 based to the below criteria.
 - A higher score indicates more severe stroke
 - It is designed to identify large vessel occlusions **ONLY**
- Patients with a score ≥ 2 **SHOULD** be transported to the nearest Comprehensive Capable Stroke Center
 - If unavailable, then transport to the next closest appropriate facility with CT and thrombolytic capability

Cincinnati Stroke Triage Assessment Tool (C-STAT)

ITEM	INSTRUCTION	RESULT	SCORE
Level of Consciousness	1) Ask the patient a. Age b. Current month	Correctly answers both questions or follows both commands	0
	2) Have them follow commands; a. Open and close eyes b. Open and close hands	Incorrectly answers at least 1 question AND does NOT follow at least 1 of commands	1
Abnormal Gaze	Observe eye deviation to one side	Absent	0
		Present	2
Arm Motor Function	Extend the arm of the patient 90° (if sitting) or 45° (if supine)	Can hold arm(s) up for ≥ 10 seconds	0
		Cannot hold up either left/right or both arm(s) for ≥ 10 seconds	1

Cerebral Vascular Accident

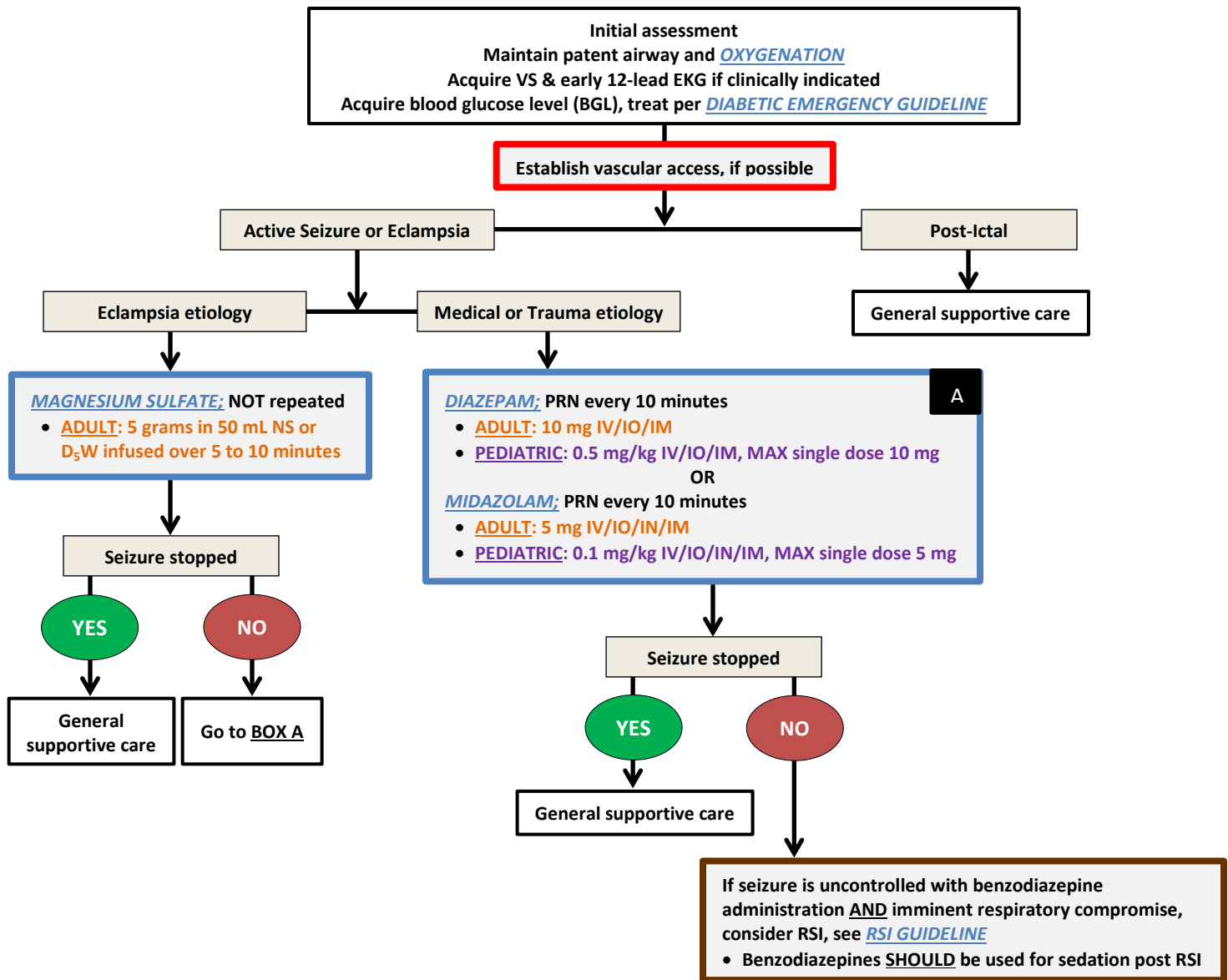
Receiving Facility Capability						
Check Availability with EMResource						
Condition	PMC	SFMC	MC	MN	GV	CH
CVA	A	A/P	A/P	A/P	A	P
CSTAT ≥ 2	A	X	A/P	X	X	P
A=Adult, P=Pediatric X=Does not accept						



Special Considerations

- Be mindful of airway compromise, see [AIRWAY MANAGEMENT GUIDELINE](#)
- If allowed, consider RSI in the patient whose airway is compromised, see [RSI GUIDELINE](#)
- If possible, elevate the head of the bed 30° during transport
- If possible, continually monitor EKG
- If possible, establish two 18G or larger IV access sites
- Not all neurologic deficits are caused by stroke. Look for treatable medical conditions such as hypoglycemia, hyperglycemia, hypothermia, hypoxia, hypotension, encephalopathy, infection, seizure, and/or hyperthermia.
- Treat hypoglycemia per [DIABETIC EMERGENCY GUIDELINE](#)
- Treat seizures per [SEIZURE GUIDELINE](#)
- Treat infection per [SEPSIS/INFECTION GUIDELINE](#)
- Treat hyperthermia per [HEAT EMERGENCIES GUIDELINE](#)
- There is no substantial evidence of acute blood pressure management in the prehospital setting for acute stroke therefore, hypertension SHOULD just be monitored, avoid excessive fluid administration.

Seizures



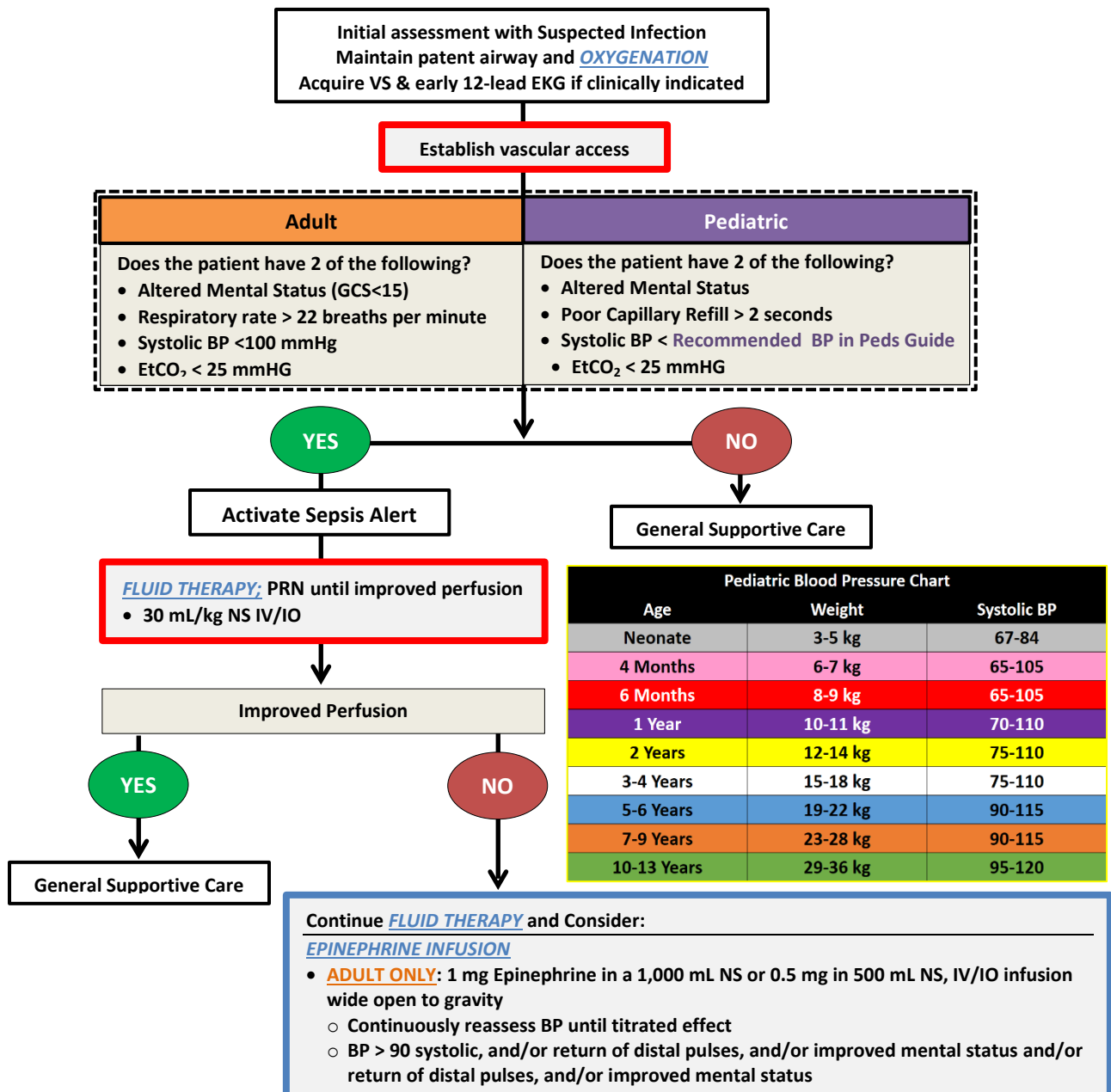
Special Considerations

- This guideline is designed to assist the prehospital provider in navigating the treatment of a patient with seizures
- Assess possibility of occult trauma and substance abuse
- Be prepared to assist ventilations especially if versed is used
- In patients over the age of 50, seizures may be due to dysrhythmias or stroke. Of these, dysrhythmia is the most important to recognize in the field.
- Consider nonconvulsive status epileptics in the patient with a prolonged post-ictal state that is not improving. Manage this state with continued benzodiazepine administration
- Pregnant patients DO NOT need to be actively seizing to administer, if there was witnessed seizure activity prior to arrival the patient SHOULD receive magnesium

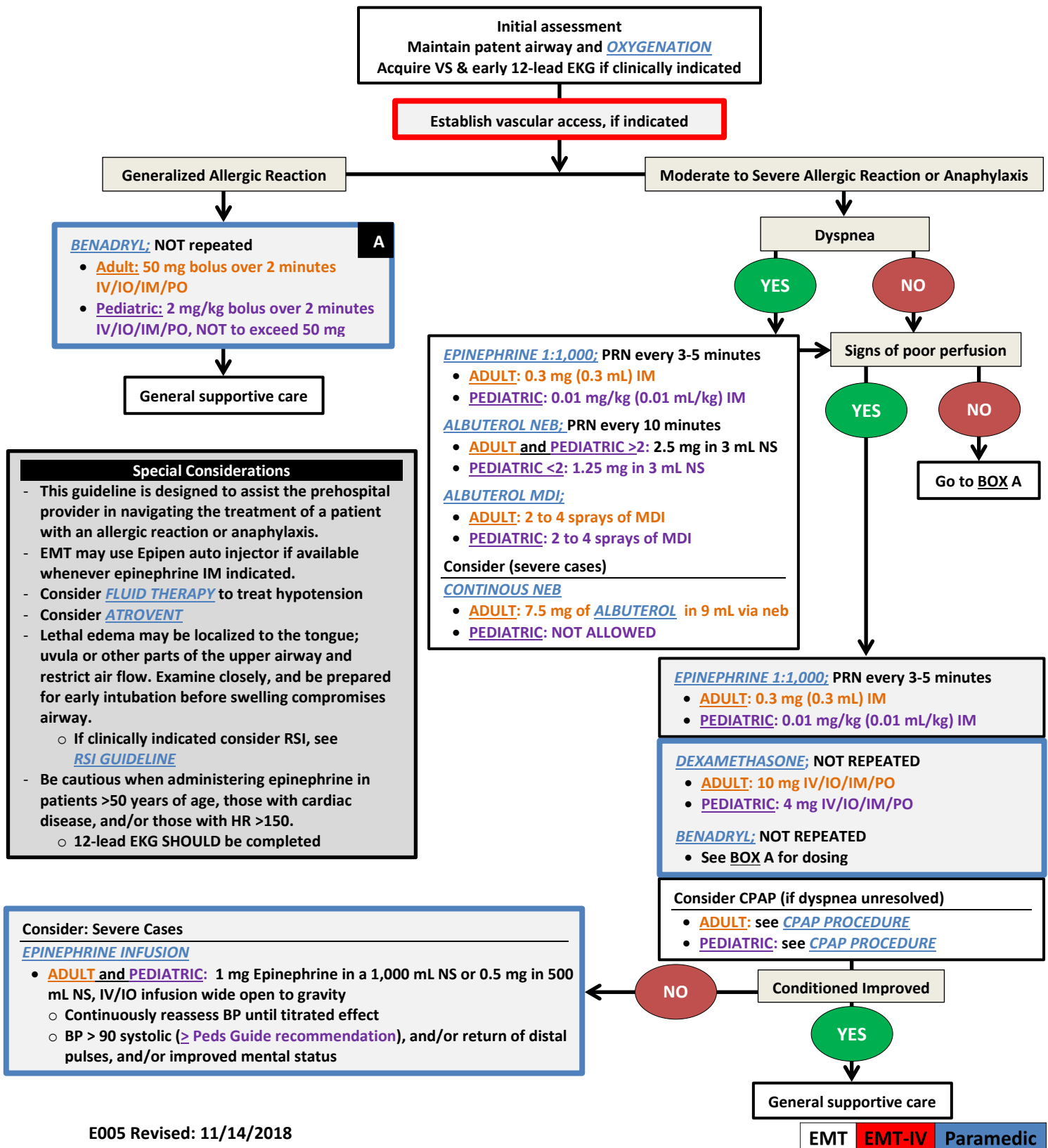
Sepsis/Infection

Description

- This guideline is designed to assist the prehospital provider in navigating the treatment of a patient with a suspected infection.
- These patients should be transported to a comprehensive facility capable of facilitating early “surviving sepsis guidelines”.
- Administration of effective intravenous antimicrobials within the first hour of recognition of septic shock and severe sepsis without septic shock is the goal of therapy.
- Providers **SHOULD** evaluate during transport for potential source of infection (urine, lung exam, full skin exam) and report any potential sources to the receiving hospital.



Allergy / Anaphylaxis



Poisoning and Overdose

Description

- This guideline is designed to assist the prehospital provider with the treatment of various types of poisoning and overdose victims.
- Although there are some nuances to each individual poison and/or overdose the general treatment is predominantly the same and includes: scene safety, maintain airway patency, treat for shock when clinically indicated and transport to the closest appropriate facility.
 - The prehospital provider is not expected to know every substance in an overdose or poisoning but rather the general classification or toxidrome (see below).
- Consider contacting Poison Control at **1-800-222-1222**
 - Poison Control may assist in allowing a patient to stay at home for nontoxic ingestions/exposures as well as assist in the management of toxic ingestions.
 - A release of care (refusal) **MUST** be completed if the patient is not transported

Special Considerations

- Symptoms differ, but certain common syndromes may suggest particular toxidrome
 - Different patients poisoned with the same substance may present with very different symptoms.
 - Patients who have multiple substances are less likely to have symptoms characteristic of a single substance
 - Consider treating a suspected antihistamine overdose similar to a TCA overdose
- There are few specific "antidotes." Product labels and home kits can be misleading and dangerous.
- Do not neutralize acids with alkalis. Do not neutralize alkalis with acids. These "treatments" cause heat-releasing chemical reactions that can further injure the GI track.
- A commonly missed external contamination is gasoline. Be sure that gasoline spilled on trauma victims is washed off promptly and clothing removed to prevent irritant burns.
- Inhalation poisoning is particularly dangerous to rescuers. Recognize an environment with continuing contamination, don proper PPE, and extricate rapidly or avoid altogether.
- Treat seizures per [SEIZURE GUIDELINE](#)
- Treat nausea and vomiting per the [NAUSEA VOMITING GUIDELINE](#)
- If the patient is presenting with withdrawal symptoms, treat per [BEHAVIORAL EMERGENCY GUIDELINE](#)
- DO NOT** rely on patient history of ingestion, especially in suicide attempts
- If applicable, consider [HAZMAT and DECON GUIDELINE](#)

Specific Toxidrome Information

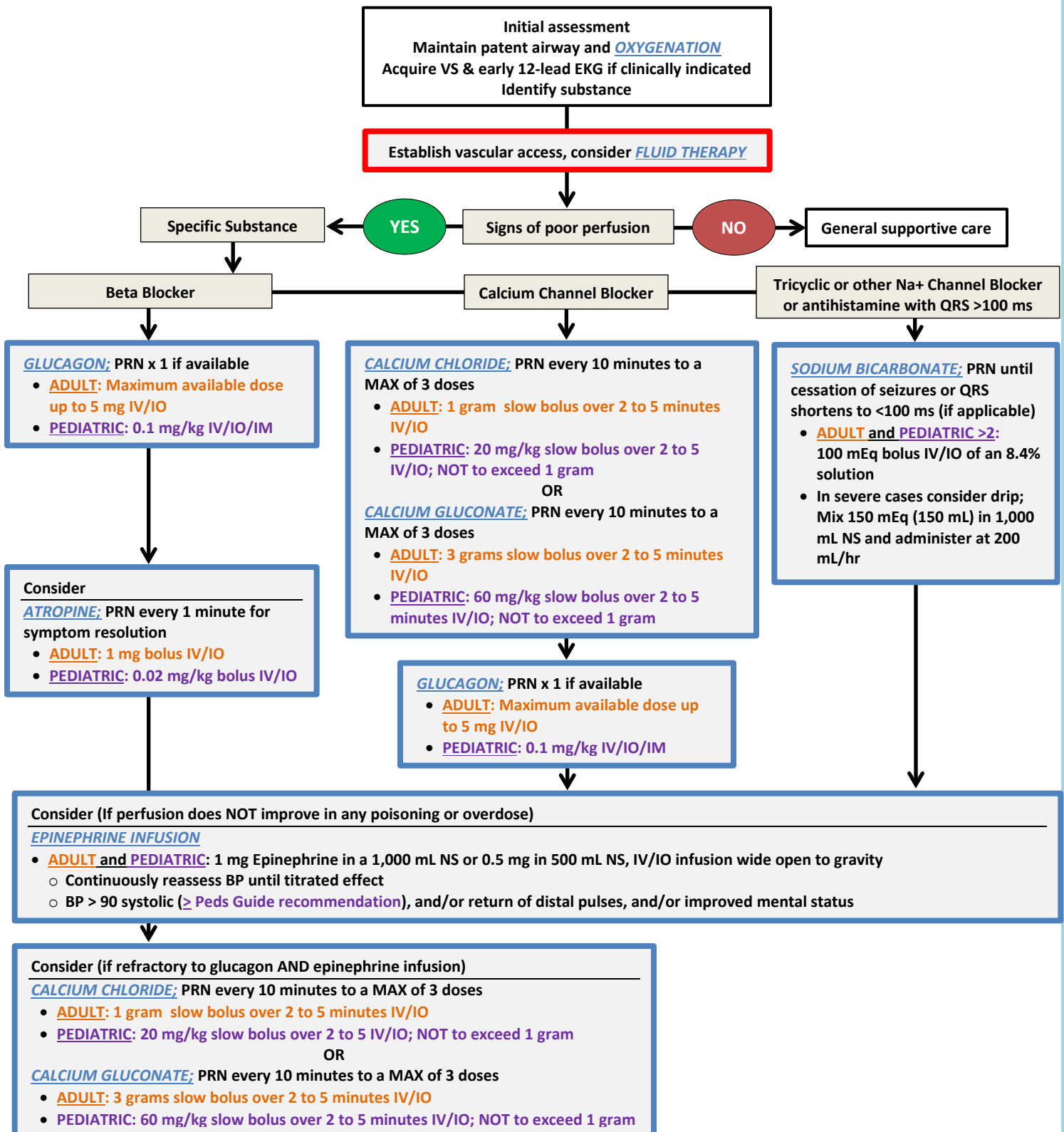
Toxidrome Findings

Toxidrome	Mental Status	Pulse	RR	BP	Pupil	Skin	Temp	Specific Medication
Opiate	Depressed	↓	↓	↓	Pinpoint	Cool	↓	Narcan
Sedative-hypnotic	Depressed	↓	↓	↓	Normal	Normal	Normal	NA
Sympathomimetic	Agitated	↑	Normal	↑	Dilated	Diaphoretic	↑	Benzodiazepine
Cholinergic	Agitated	↑↓	Normal	↑↓	Dilated	Diaphoretic	Normal	Atropine
Anticholinergic	Agitated/delirium	↑	↑↓	↑↓	Dilated	Dry	↑	Benzodiazepine

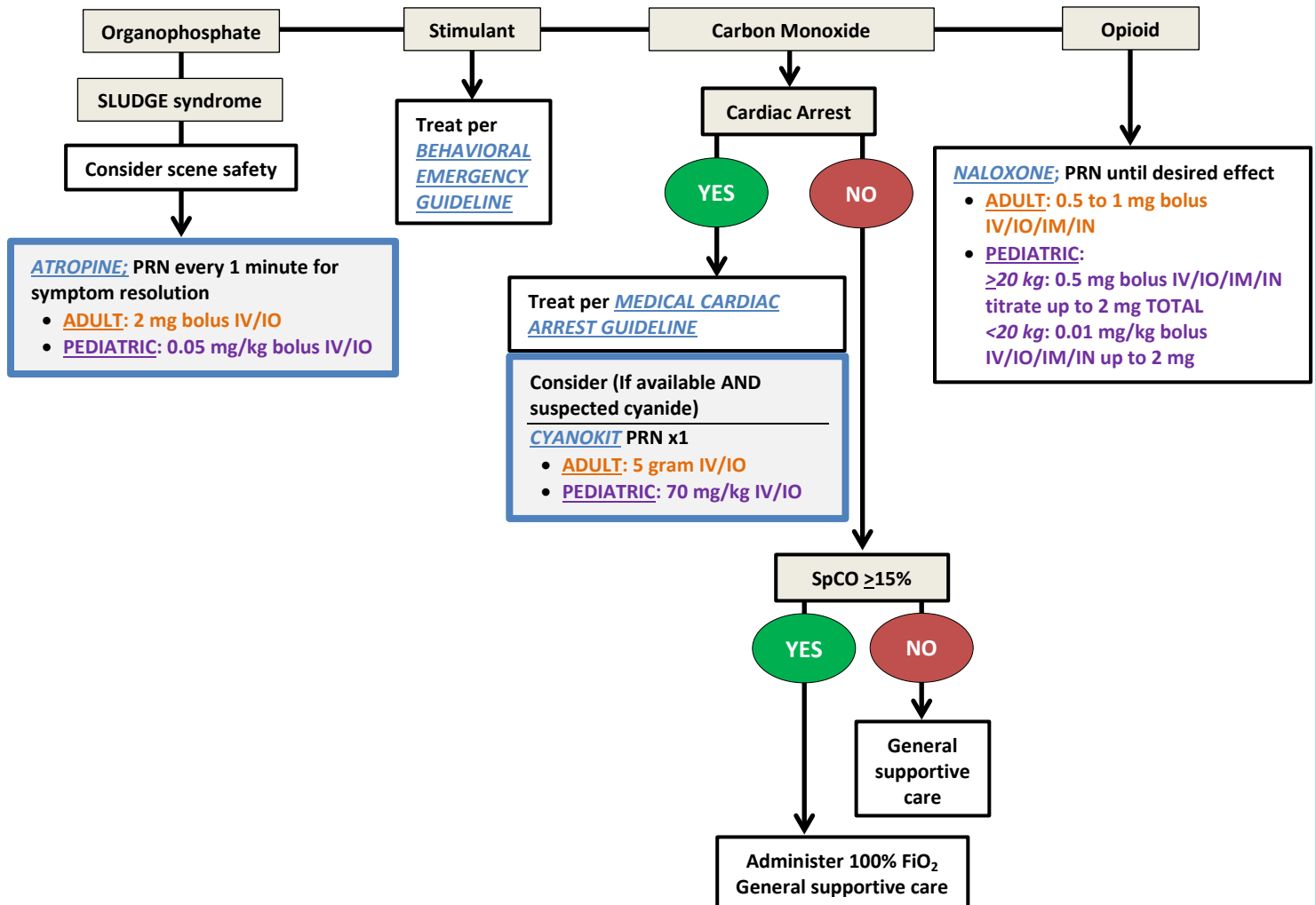
Withdrawal Syndromes

Opioids	Agitated	↑	↑	↑	Dilated	Normal to wet	↑	Opioid
Sedative-hypnotic	Normal	↑	Normal	↑	Dilated	Wet	Normal	Benzodiazepine

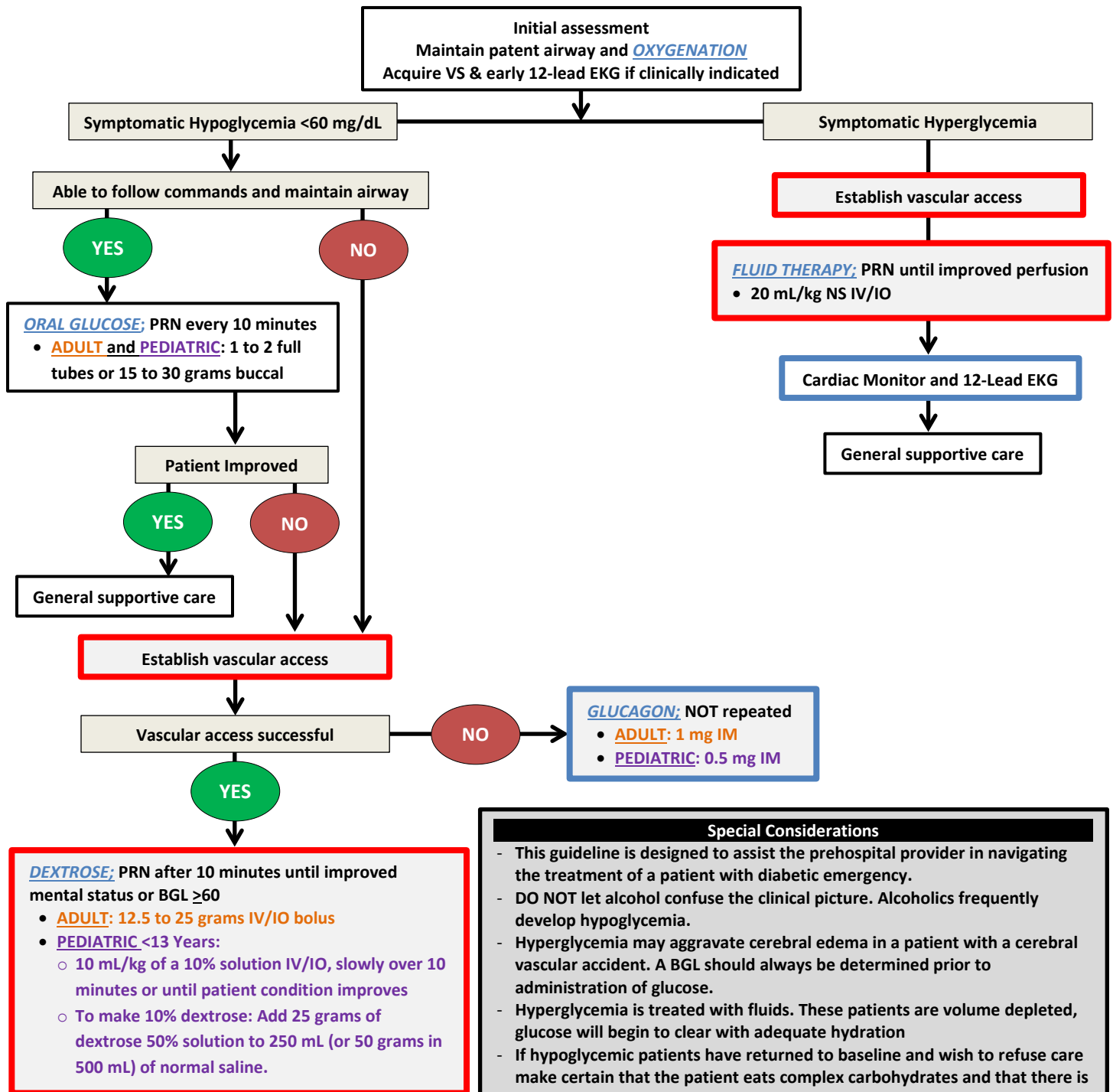
Poisoning and Overdose



Poisoning and Overdose



Diabetic Emergency



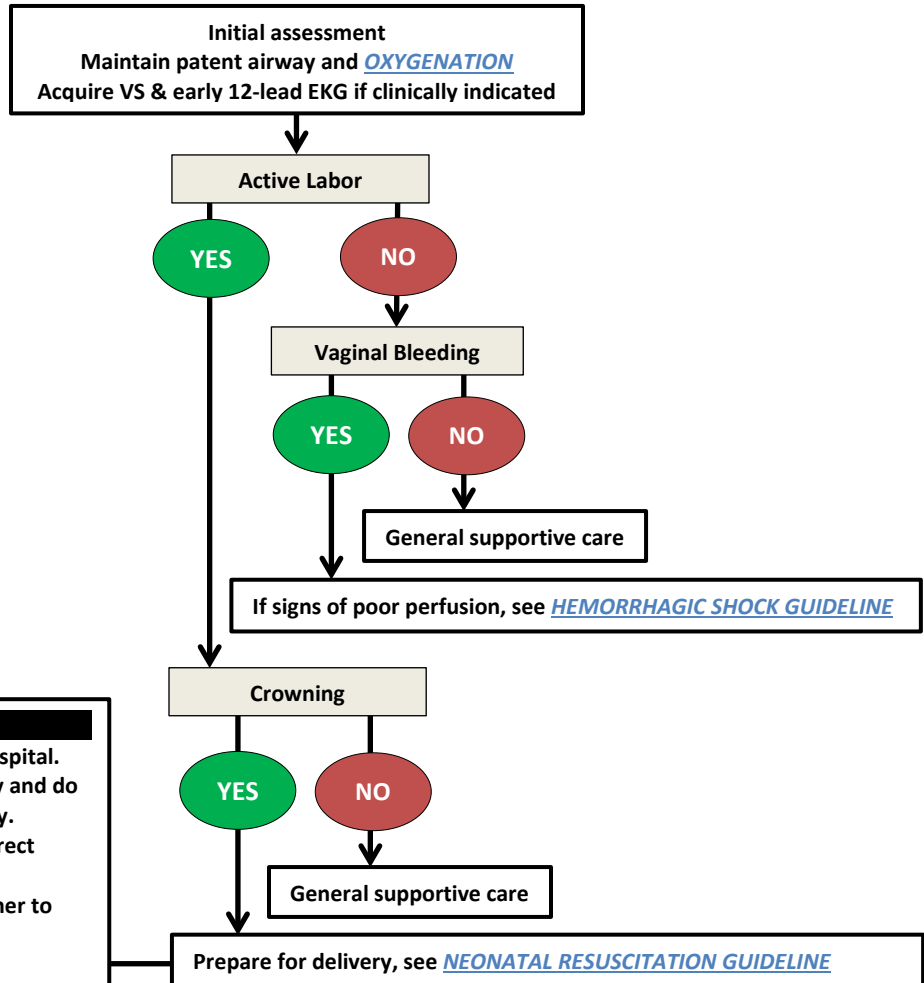
Special Considerations

- This guideline is designed to assist the prehospital provider in navigating the treatment of a patient with diabetic emergency.
- DO NOT let alcohol confuse the clinical picture. Alcoholics frequently develop hypoglycemia.
- Hyperglycemia may aggravate cerebral edema in a patient with a cerebral vascular accident. A BGL should always be determined prior to administration of glucose.
- Hyperglycemia is treated with fluids. These patients are volume depleted, glucose will begin to clear with adequate hydration
- If hypoglycemic patients have returned to baseline and wish to refuse care make certain that the patient eats complex carbohydrates and that there is someone to observe them for repeat hypoglycemic episodes. See REFUSAL GUIDELINE
- If symptoms do not resolve after treatment, consider other causes
- A sugary juice mixture or similar product can be substituted for ORAL GLUCOSE

Receiving Facility Capability						
Check Availability with EMResource						
Condition	PMC	SFMC	MC	MN	GV	CH
Pregnancy < 23 Weeks	A/P	A/P	A/P	A/P	A	P
Pregnancy > 23 Weeks	X	A/P	A/P	A/P	X	P
Breech	A/P	A/P	A/P	A/P	A/P	P

A=Adult, P=Pediatric X=Does not accept

OB/GYN Emergency



Post-Partum Care

- Collect placenta in plastic bag and bring to hospital. Do not pull cord to facilitate placenta delivery and do not delay transport awaiting placenta delivery.
- If the perineum is torn and bleeding, apply direct pressure with sanitary pads
- Perform Fundal massage and encourage mother to breast feed. Signs of poor perfusion see [HEMORRHAGIC SHOCK GUIDELINE](#)

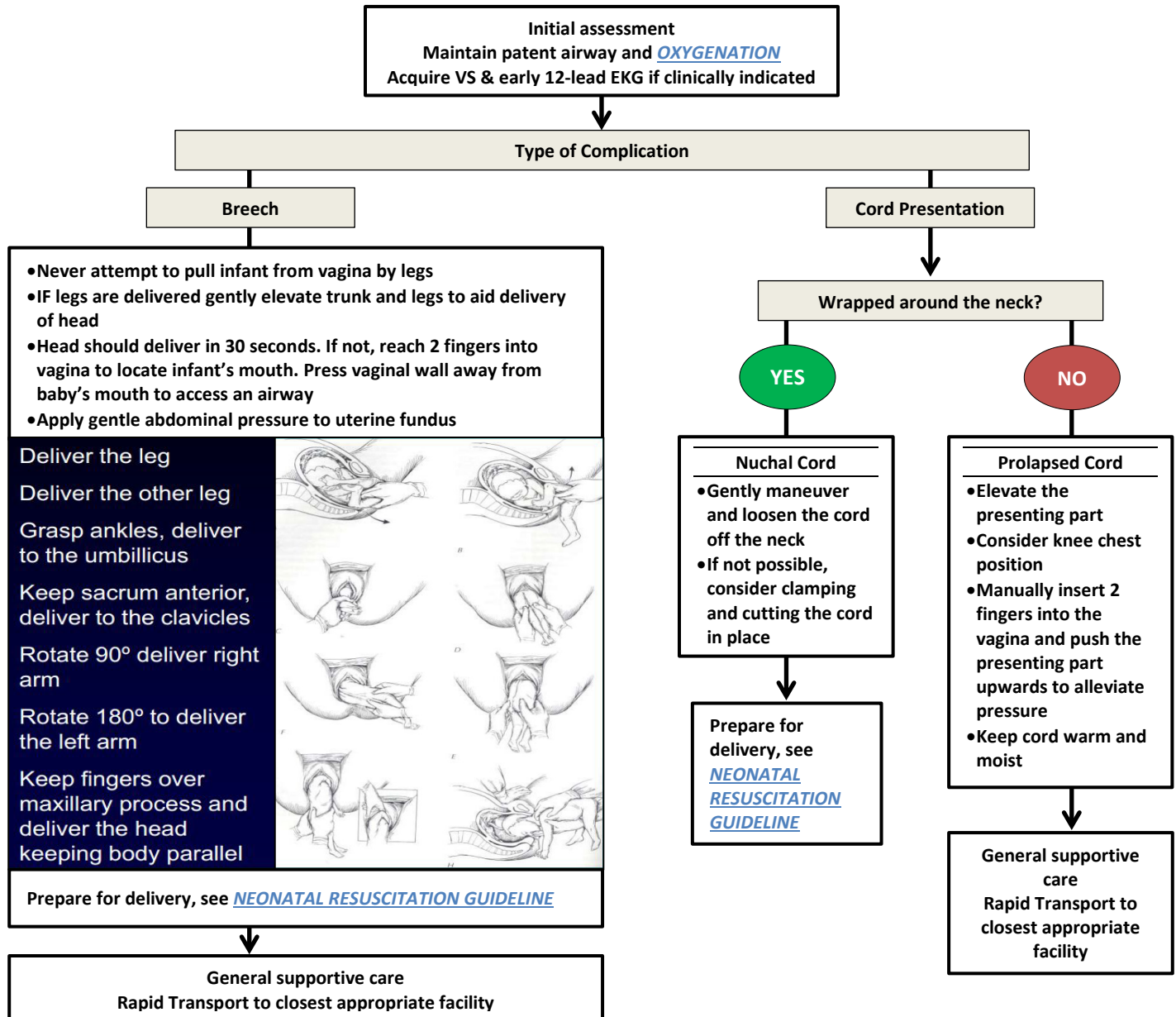
Special Considerations

- This guideline is designed to assist the prehospital provider in navigating the treatment of a patient with an OB/GYN emergency
- Patient with prolapsed cord should be placed in left lateral recumbent position in Trendelenburg. The knee-chest position is generally described as the preferred position, but seems difficult to perform safely in a moving vehicle. If adequate restraints are available to *comfortably* and *safely* restrain, knee-chest may be preferred.
- Breech presentation should be placed in the knee to chest position
- Supine hypotension occurs after 20 weeks in some women, due to compression of the Inferior Vena Cava by the gravid uterus. The left lateral recumbent position is optimum for avoiding this.
- Treat seizures per [SEIZURE GUIDELINE](#)
- Treat pain per [PAIN MANAGEMENT GUIDELINE](#)
- Treat nausea/vomiting per [NAUSEA VOMITING GUIDELINE](#)
- Any pregnant patient involved in a MVC should be seen immediately by a physician for evaluation and fetal monitoring.
- Consider transport to the closest emergency department for any one of the following conditions;
 - Abnormal presentation
 - Severe vaginal bleeding
 - Cardiac arrest with gestation ≥ 23 weeks

Receiving Facility Capability						
Check Availability with EMResource						
Condition	PMC	SFMC	MC	MN	GV	CH
Pregnancy < 23 Weeks	A/P	A/P	A/P	A/P	A	P
Pregnancy > 23 Weeks	X	A/P	A/P	A/P	X	P
Breech	A/P	A/P	A/P	A/P	A/P	P

A=Adult, P=Pediatric X=Does not accept

OB Breech Emergency



Special Considerations

- This guideline is designed to assist the prehospital provider in navigating the treatment of a patient with a breech delivery
- These techniques may not be feasible in all situations, or does every OB complication be expected or well managed in the field. This guideline should be considered "best advice" for rare, difficult scenarios. In every case, initiate immediate transport to definite care
- Breech presentation occurs in 3–4% of term deliveries and is more common preterm
- **Shoulder Dystocia:** Be sure to support the head and facilitate delivery by placing mother with buttocks just off the end of bed, flex her thighs upward and apply gentle open hand pressure above the pubic bone.
- Treat seizures per [SEIZURE GUIDELINE](#)
- Treat pain per [PAIN MANAGEMENT GUIDELINE](#)
- Treat nausea/vomiting per [NAUSEA VOMITING GUIDELINE](#)

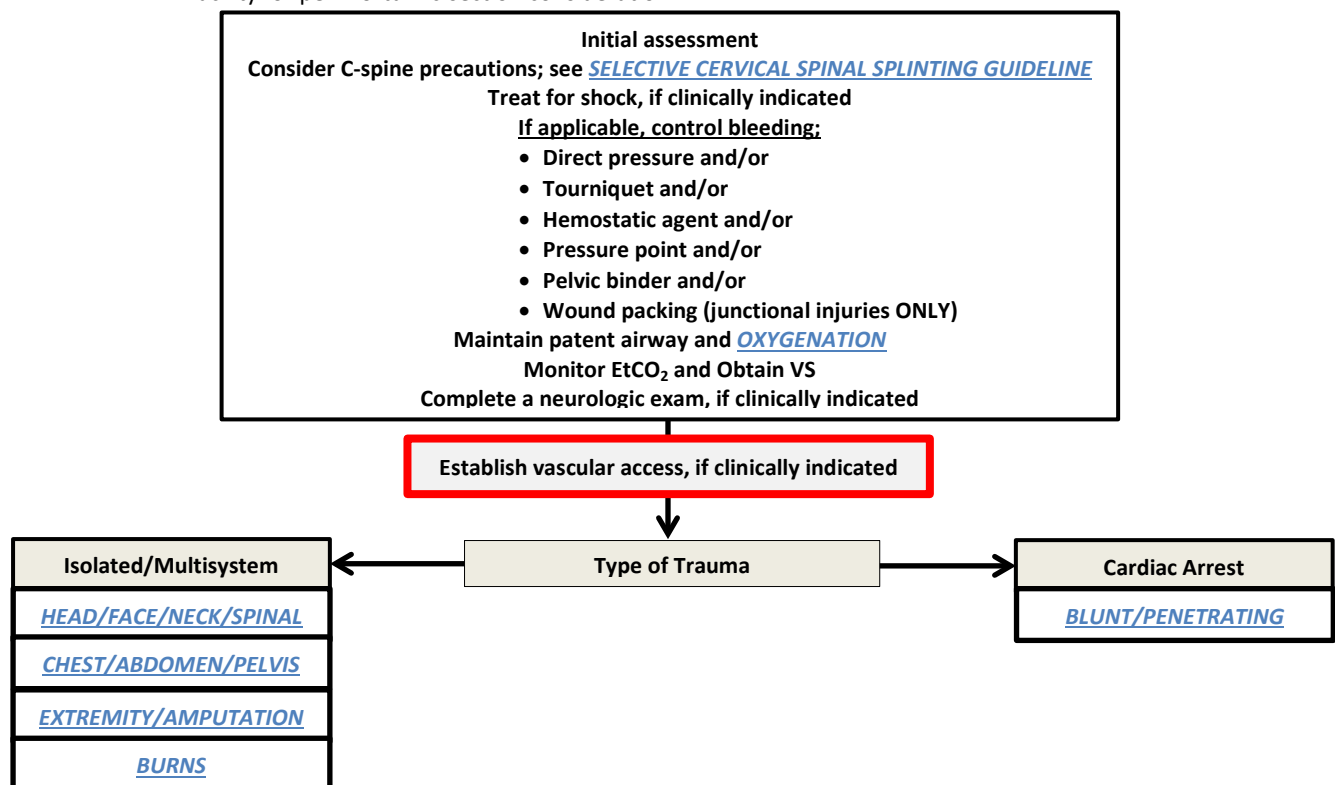
General Trauma Management

Description

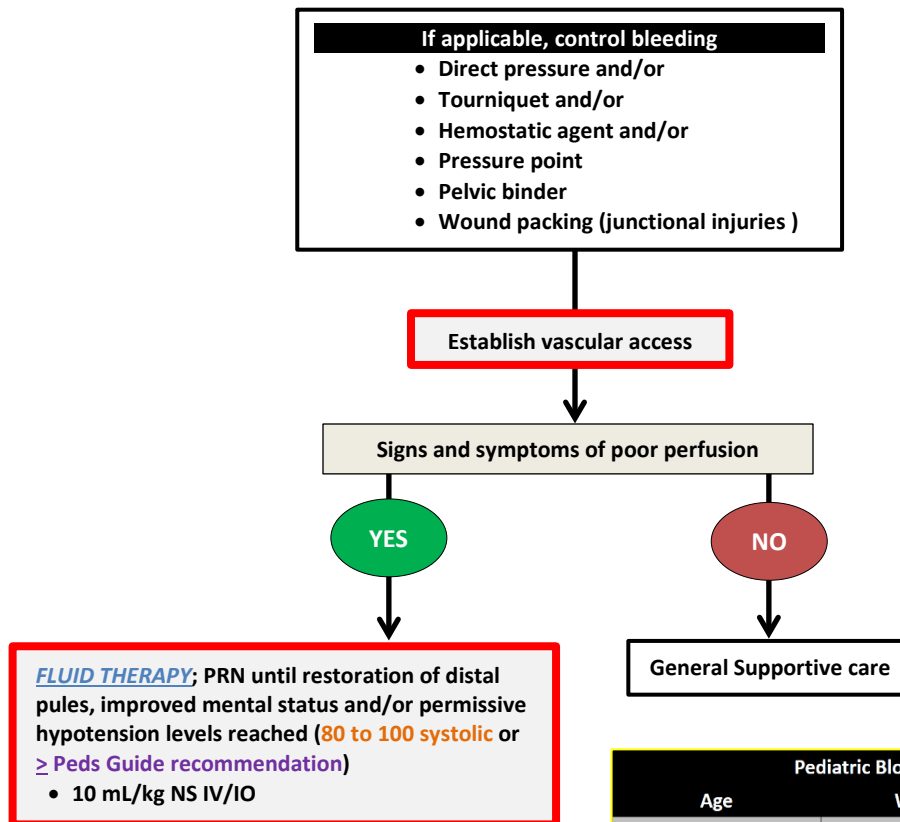
- Traumatic injuries require prompt care and transportation.
- Any chest or abdominal injuries, and all head injuries that result in a change or loss of consciousness, **SHOULD** receive an emergency department evaluation unless refused by a decisional patient or guardian, see [PATIENT REFUSAL GUIDELINE](#)
- Always have a high index of suspicion for injury based on mechanism of injury in conjunction with pertinent medical history.
- All trauma treatment guidelines cover both adult and pediatric injuries
For pediatrics, reference Pediatric Field Guide, Broselow Tape, Handtevy Guide or approved apps

Special Considerations

- EtCO₂ **SHOULD** be utilized in any major trauma to help identify early signs of hypoperfusion.
 - MUST** be used (if available) in all severe TBI patient to manage eucapnea and avoid hyper or hypoventilation
- Certain trauma situations call for assessment and treatment that goes beyond the standard treatment given for the patient's presenting complaints and injury.
- Prompt recognition of compensated shock/injuries, aggressive prehospital interventions, and rapid transport to the closest appropriate facility will most likely improve outcomes.
 - Scene times in traumatic injuries should be **10** minutes or less if possible. Invasive treatments should be performed en route. Early notification to receiving facility will allow time to prepare for appropriate personnel and equipment.
- Trauma in pregnancies can complicate assessment and treatment. Patients with any thoracic, abdominal, or pelvic complaint/injury may require prolonged fetal monitoring in the facility; this is true even if asymptomatic or seemingly minor mechanism. Encourage transport of all patients.
 - Avoid supine position, place in left lateral recumbent $\geq 30^\circ$
 - Interpret VS with caution due to increased heart rate, decreased blood pressure, and increased blood volume
 - Traumatic cardiac arrest with suspected gestation ≥ 23 weeks indicates rapid transport to closest appropriate facility for perimortum c-section consideration.



Hemorrhagic Shock



Pediatric Blood Pressure Chart		
Age	Weight	Systolic BP
Neonate	3-5 kg	67-84
4 Months	6-7 kg	65-105
6 Months	8-9 kg	65-105
1 Year	10-11 kg	70-110
2 Years	12-14 kg	75-110
3-4 Years	15-18 kg	75-110
5-6 Years	19-22 kg	90-115
7-9 Years	23-28 kg	90-115
10-13 Years	29-36 kg	95-120

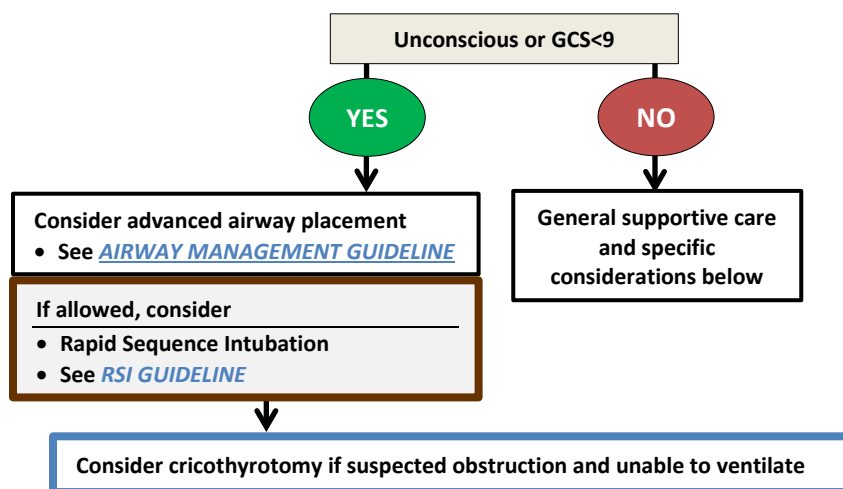
Special Considerations

- This guideline is designed to be a guideline to assist the healthcare provider in navigating the treatment of a patient WITH suspected hemorrhagic shock.
- These patients should be transported to a designated trauma center (see [DESTINATION GUIDELINE](#))
- Poor perfusion in the pediatric patient includes the "fatal five" which are tachycardia, altered mental status, respiratory compromise, decreased or absent peripheral pulses, and delayed capillary refill (> 2 seconds).
- Be mindful of the "Triad of Death" which includes hypothermia, coagulopathy, and acidosis. Be sure to keep the patient warm and be cautious of excessive fluid administration
- If patient meets Trauma Activation criteria, interventions SHOULD be performed en route to the facility to minimize scene time.
- Make sure to maintain the blood pressure between 80 and 100 mmHg systolic (permissive hypotension)

Face, Neck and Spine Injuries

Description

- This guideline is designed to assist the prehospital provider's treatment of various head, face, neck, and spine injuries.
- Although there are some nuances to each individual injury the general treatment is predominantly the same and includes: control all major bleeding, maintain airway patency, consider cervical spine precautions, consider pain management, and treat for shock when clinically indicated and rapid transport to the closest appropriate facility.
- If stable consider pain management, see [PAIN MANAGEMENT GUIDELINE](#)



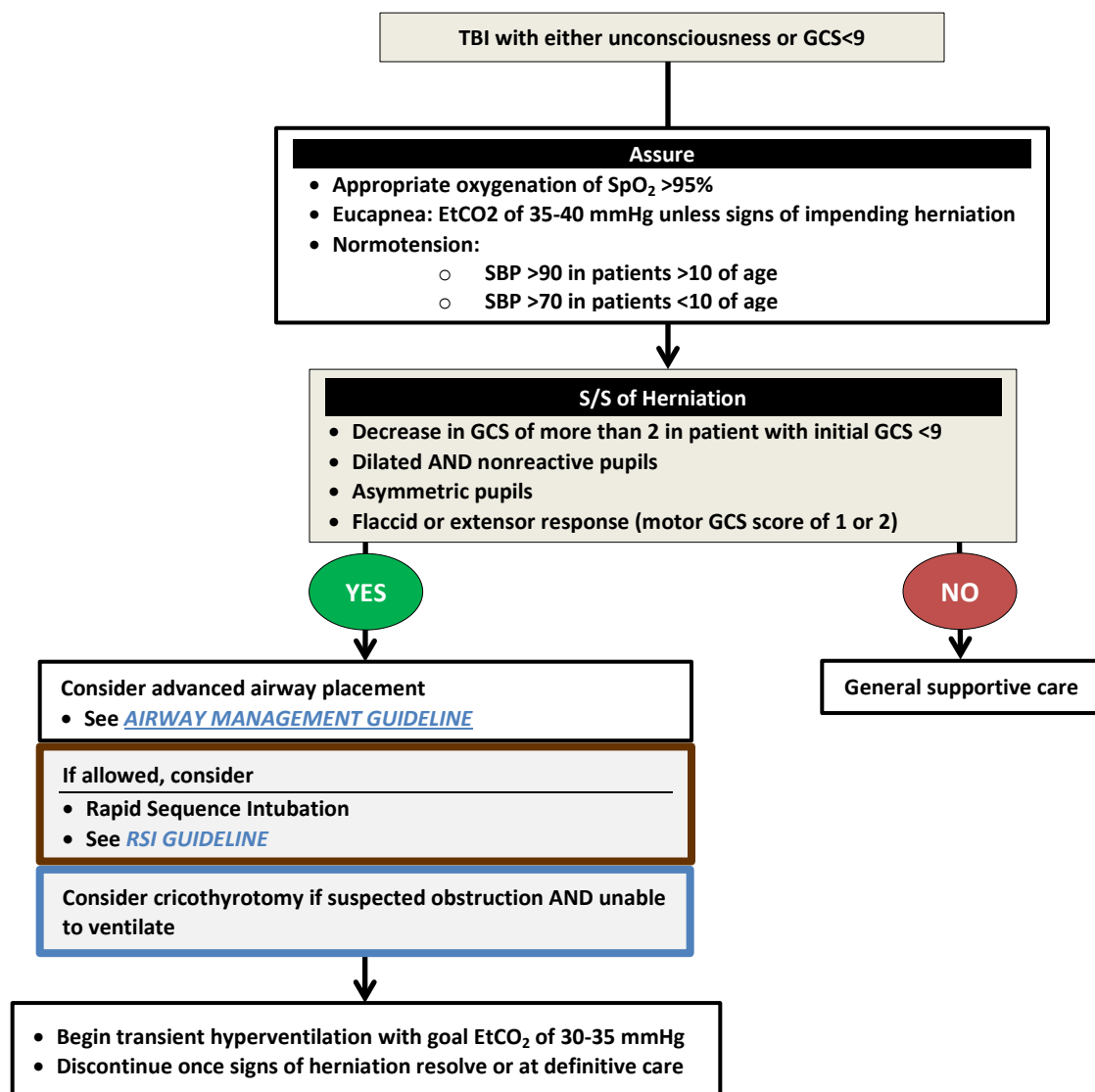
Specific Considerations

- **HEAD and FACE INJURIES:**
 - Treat seizures per [SEIZURE GUIDELINE](#)
 - Treat agitation per [BEHAVIORAL EMERGENCY GUIDELINE](#)
 - Obtain BGL value
 - Cover/protect both eyes as clinically indicated
 - Do not try to block drainage from ears or nose
 - Save avulsed teeth in saline-soaked gauze, do not scrub clean
- **NECK and SPINAL INJURIES:**
 - Consider occlusive dressing for penetrating neck wounds
 - If hypotension is unresponsive to simple measures, it is likely due to other injuries. Neurologic deficits make these other injuries hard to evaluate. Cord injury above the level of T-8 removes tenderness, rigidity, and guarding as clues to abdominal injury.
 - Spinal precautions NOT routinely indicated for penetrating trauma and is rarely associated with unstable spinal column unless neurological deficits are identified.
- **HYPOTENSION:**
 - If signs of poor perfusion due to suspected bleeding, see [HEMORRHAGIC SHOCK GUIDELINE](#)
 - If signs of poor perfusion unresponsive to fluid therapy and HIGH suspicion of neurogenic shock, consider [EPINEPHRINE INFUSION](#)
- **ATHLETIC EQUIPMENT:**
 - DO NOT remove helmet or shoulder pads prior to EMS transport unless they are interfering with the management of acute life threatening injuries.
 - If the helmet or shoulder pads are removed, then BOTH MUST be removed to keep spinal alignment.
 - Consider removing equipment for long transports
 - The helmet and pads should be considered one unit. Therefore, if one is removed, then the other should be removed as well so as to assure neutral spinal alignment.
 - All athletic equipment is NOT the same and athletic trainers on scene should be familiar with equipment

Traumatic Brain Injury (TBI)

Description

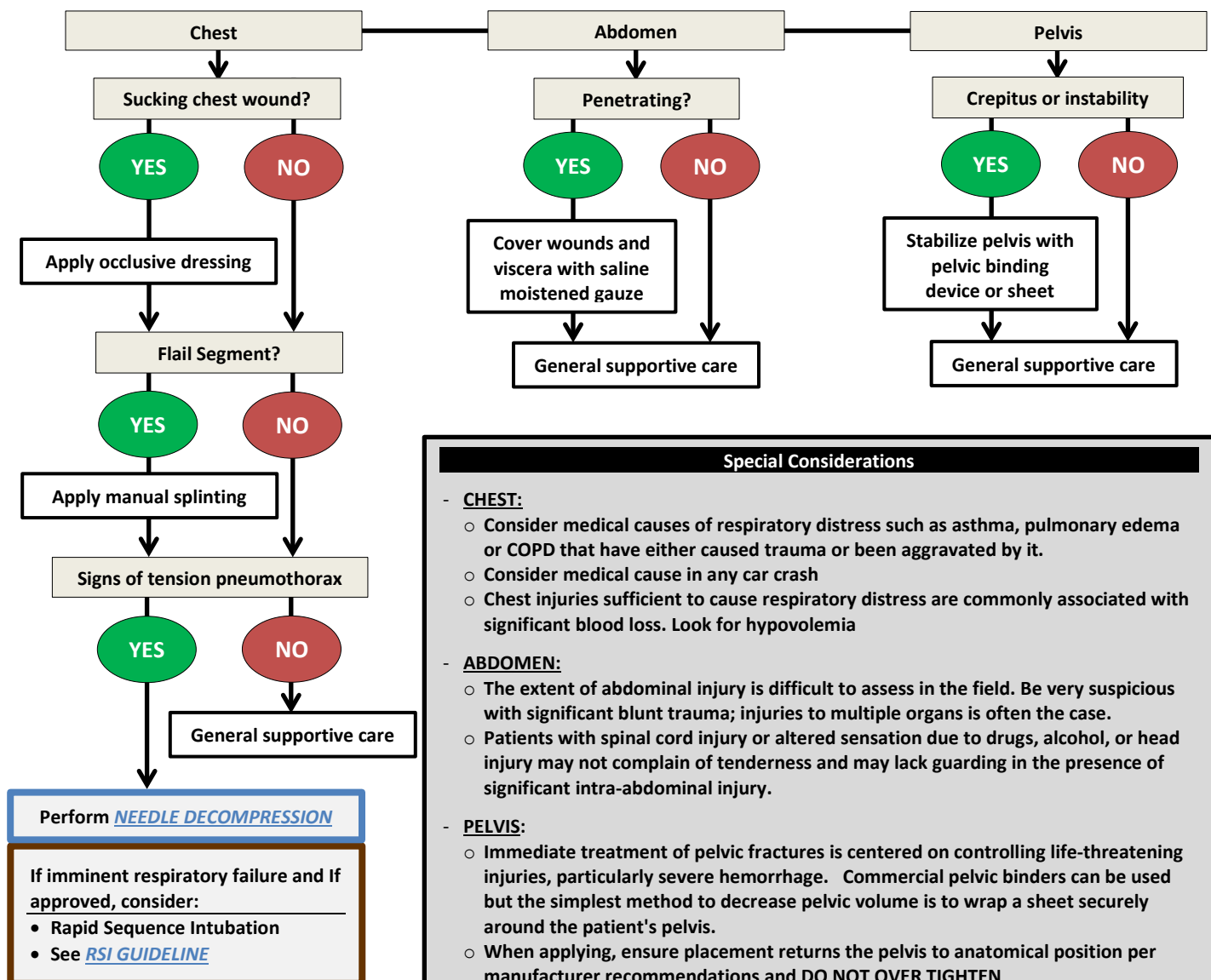
- This guideline is designed to assist the prehospital provider's treatment of a traumatic brain injury (TBI).
- In traumatic brain injuries, obtain BGL value, elevate head 30° if possible and if applicable, position cervical splinting to avoid impeding vascular drainage
- Treat seizures per [SEIZURE GUIDELINE](#)
- Treat agitation per [BEHAVIORAL EMERGENCY GUIDELINE](#)



Chest, Abdomen, and Pelvic Injuries

Description

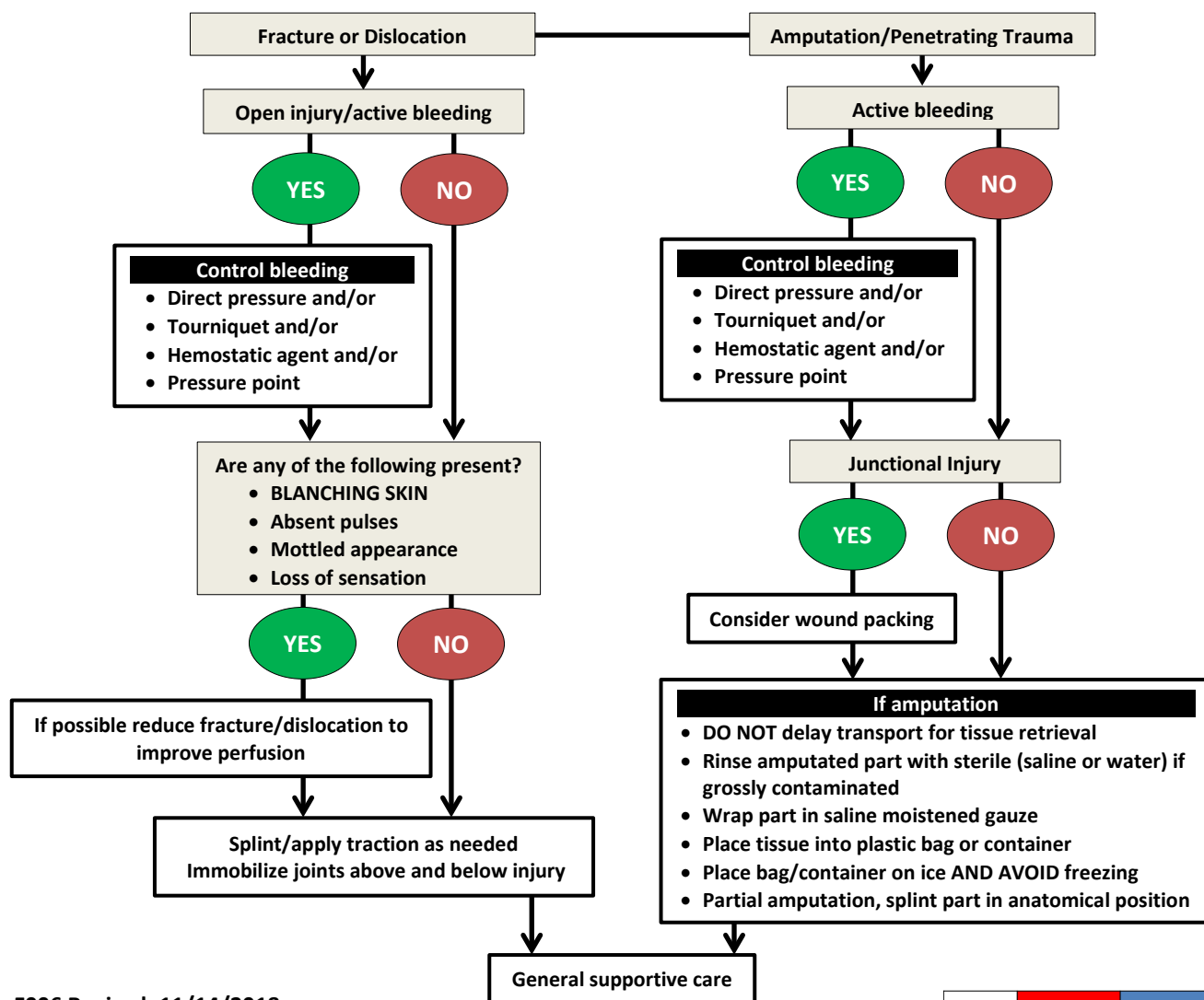
- This guideline is designed to assist the prehospital provider's treatment of various chest, abdomen, and pelvic injuries.
- Although there are some nuances to each individual injury the general treatment is the predominantly same and includes, control all major bleeding, maintain airway patency, consider cervical spine precautions, consider pain management, treat for shock when clinically indicated, and rapid transport to the closest appropriate facility.
- If stable consider pain management, see [PAIN MANAGEMENT GUIDELINE](#)



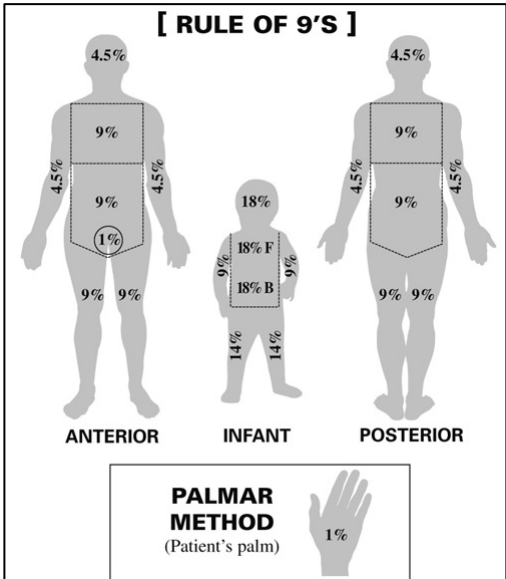
Extremity/Amputation Injuries

Description

- This guideline is designed to assist the prehospital provider's treatment of various extremity injuries.
- Although there are some nuances to each individual injury the general treatment is the predominantly same and includes, control all major bleeding, maintain airway patency, consider cervical spine precautions, consider pain management, treat for shock when clinically indicated, and rapid transport to the closest appropriate facility.
- If signs of poor perfusion due to suspected bleeding, see [HEMORRHAGIC SHOCK GUIDELINE](#)
- If stable, consider pain management, see [PAIN MANAGEMENT GUIDELINE](#)
- Peripheral neurovascular status **SHOULD** be documented on all extremity injuries and before and after splinting procedures.
- Document approximate time of injury
- DO NOT** allow severely angulated, open, bloody fractures to distract you from life threatening injuries
- Approved dislocation reduction locations **WITHOUT** neurovascular compromise limited to patella and **WITH** neurovascular compromise (blanching skin) limited to the ankles.
 - If attempt to relocate injury is unsuccessful after 2 attempts, splint in position found and transport.
- Reduction of **OPEN** dislocations is **NOT ALLOWED**



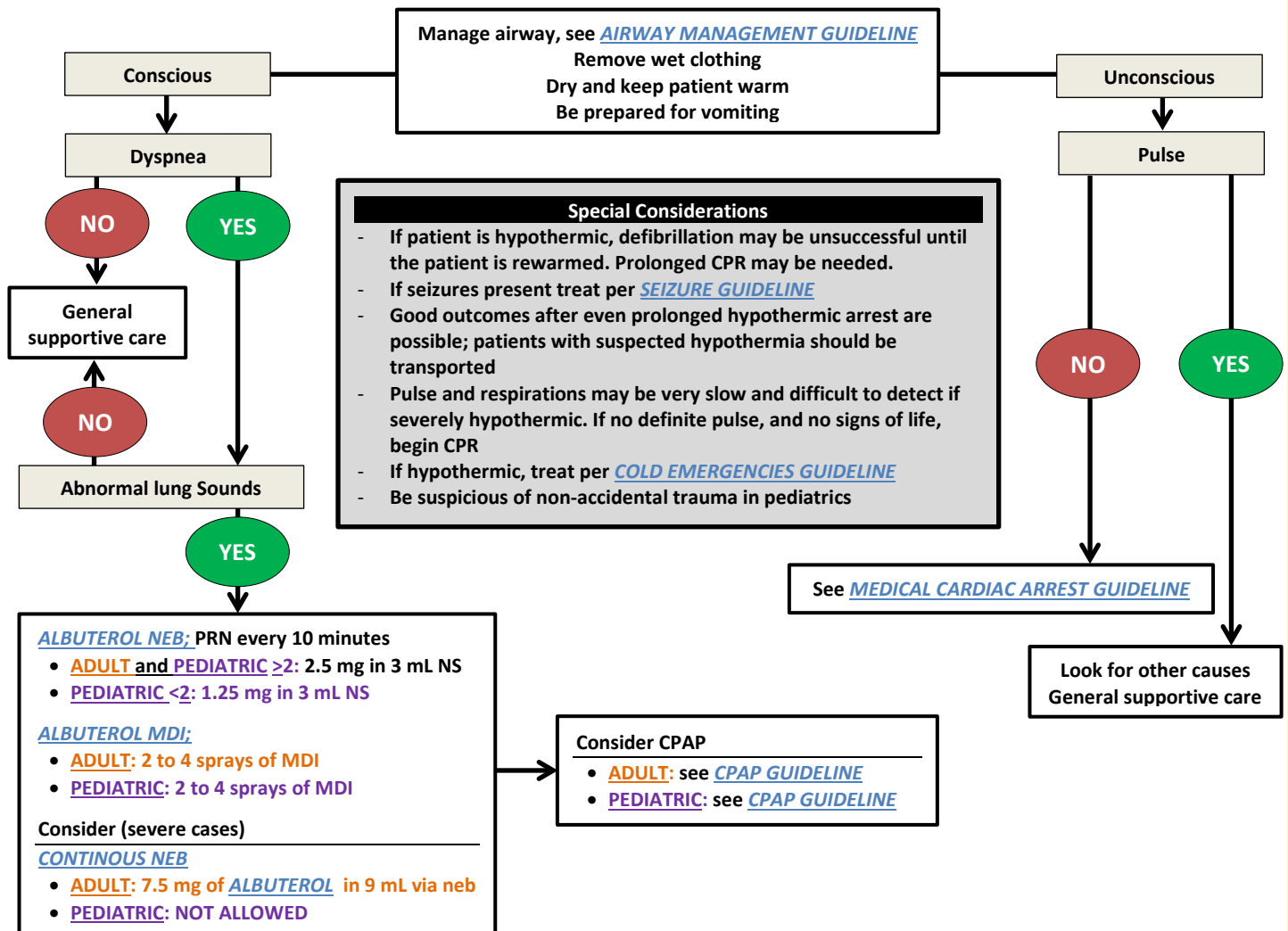
- a. This guideline is designed to assist the prehospital provider's treatment of various burn injuries.
- b. Monitor airway closely with any suspected airway or inhalation burns. Edema may become severe but **NOT** usually in the 1st hour. Intubation **SHOULD** be performed for any concerns of worsening airway.
- c. Consider carbon monoxide/cyanide poisoning if victim was in a confined space, see [POISONING OVERDOSE GUIDELINE](#)
- d. Circumferential burns to extremities and/or trunk are dangerous due to potential vascular compromise secondary to soft tissue swelling.
- e. Burn patients are prone to hypothermia. **DO NOT** cool burns that involve $\geq 10\%$ body surface area (BSA)
- f. **DO NOT** overlook the possibility of multiple system trauma or child abuse with burn injuries
- g. The patient's palm represents 1% of their BSA, use the "rule-of-9's" as a reference
- h. If shock present or the patient is unconscious, consider underlying causes
- i. Use appropriate personal protective equipment when treating patients with chemical burn
- j. If stable, consider pain management, see [PAIN MANAGEMENT GUIDELINE](#)



Submersion Injuries

Description

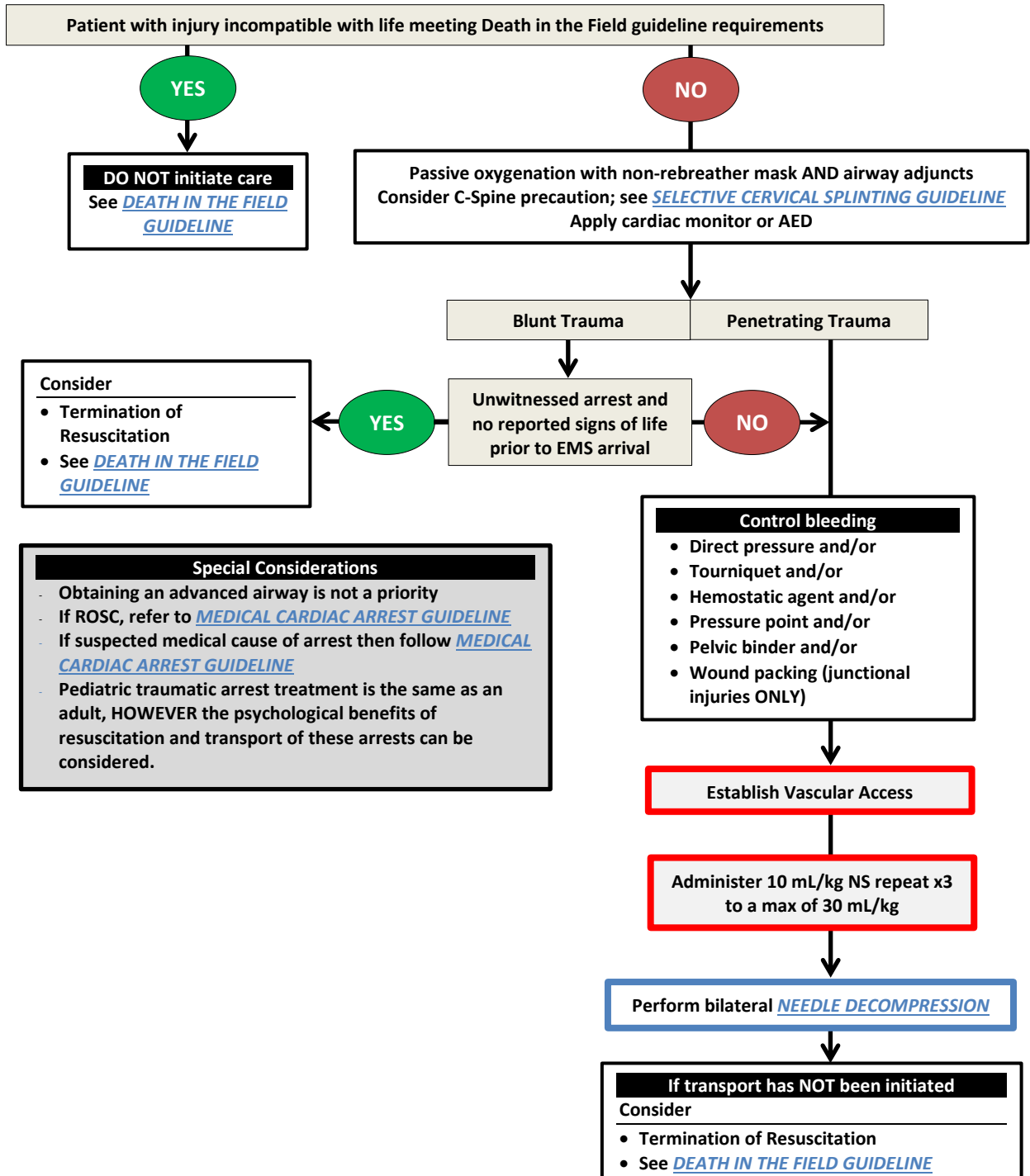
- Drowning and near drowning refer to submersion injuries. This guideline is designed to assist the prehospital provider's treatment of submersion injuries.
- Predisposing factors include alcohol abuse, drug Intoxication, barotrauma and syncope secondary to a medical condition (MI, Seizures, diabetes, cerebrovascular accident, arrhythmias, etc.)
 - Spinal precautions **SHOULD** be used when a suspected or known traumatic mechanism preceded the drowning.
 - Closed head injury **SHOULD** be suspected in any near drowning victim who is unconscious or demonstrates changing mental status
- Barotrauma is associated with SCUBA diving with the worst cases being air embolism or CNS Bends and can occur within 3 hours of surfacing. Any SCUBA diver who is a near drowning victim and exhibits AMS and/or dyspnea with clear lung sounds **SHOULD** be assumed to have one of these.
- ALL** submersions should be transported. Even if patients initially appear fine, they can deteriorate.
 - Monitor closely, pulmonary edema often occurs due to aspiration, hypoxia, and other factors. It may not be evident for several hours after near-drowning.
 - If patient refuses transport, assure they are aware of future risk of decompensation and document



Traumatic Cardiac Arrest

Description

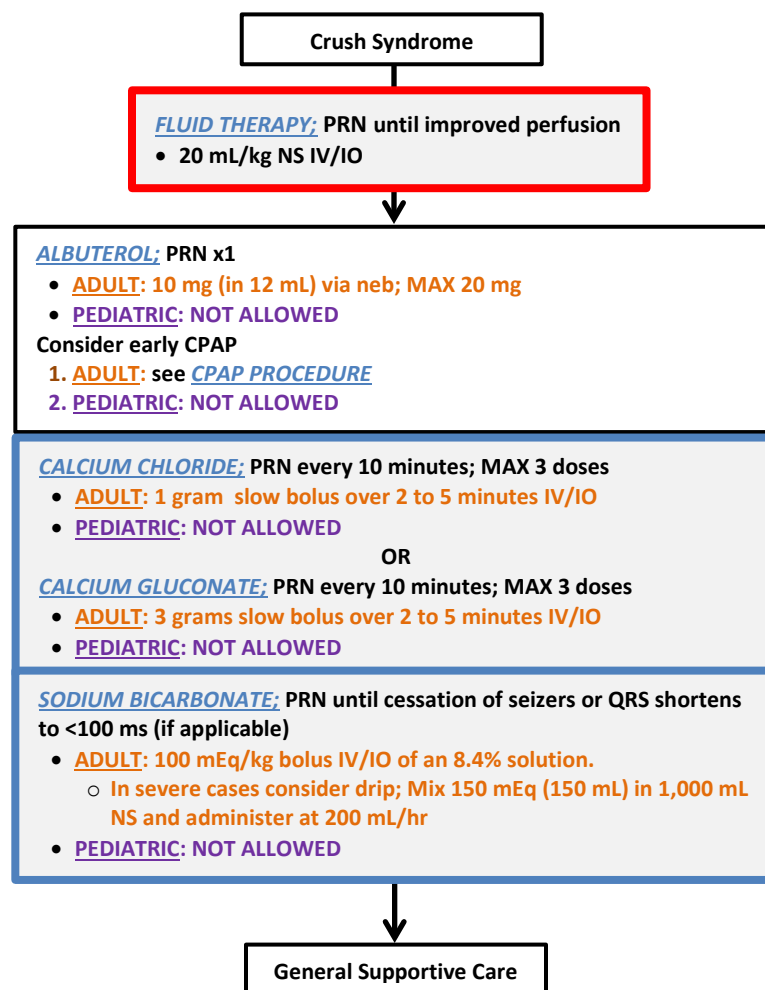
- This guideline is designed to assist the prehospital provider's treatment of traumatic cardiac arrest.
- Initiate care on scene and complete all clinically indicated interventions prior to departure.
 - If ROSC is NOT achieved consider Termination of Resuscitation



Crush Injuries

Description

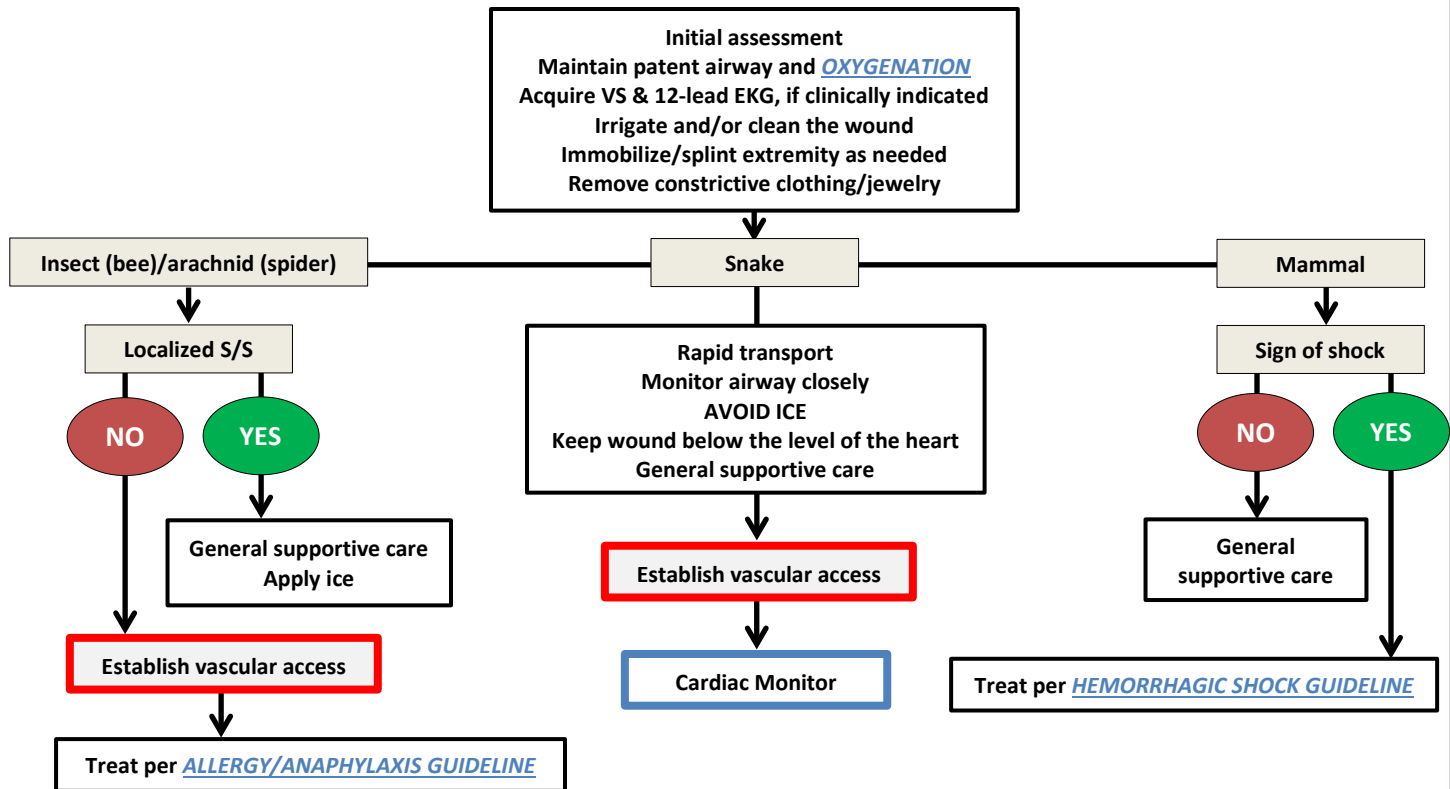
- This guideline is designed to assist the prehospital provider's treatment of a crush injury
- FLUID THERAPY** and medication administration is **PREFERRED** prior to extrication whenever possible
- Large volume resuscitation prior to removal of the crush object and extrication is critical to preventing secondary renal failure, cardiac dysrhythmias, and death.
- Consider pain management, see [PAIN MANAGEMENT GUIDELINE](#)
- If suspected major bleeding, see [HEMORRHAGIC SHOCK GUIDELINE](#)



Special Considerations

- Crush syndrome may cause profound hyperkalemia resulting in dysrhythmias, monitor EKG if possible
- Crush syndrome is usually seen with compression of 4 to 6 hours but may occur in as little as 20 minutes
- If possible monitor patient for signs of compartment syndrome (pain, pallor, paresthesias, pulselessness)
- Crush injury victims can 3rd space > 12 liters in the first 48 hrs.
- Do not overlook treatment of additional injuries, airway compromise, hypothermia/ hyperthermia

Bites and Stings



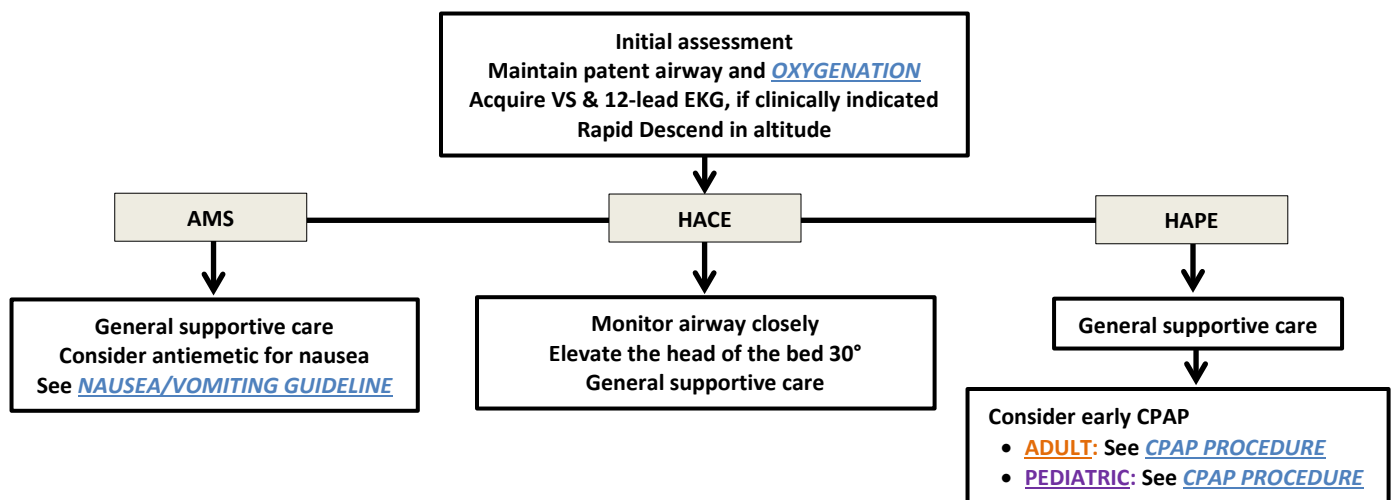
Special Considerations

- This guideline is designed to assist the prehospital provider's treatment of various bites and stings, Consider contacting the US Poison Control Center for guidance. **1-800-222-1222**
- If stable, consider pain management, see [PAIN MANAGEMENT GUIDELINE](#)
- **INSECT (bee)/ARACHNID (spider):**
 - o Remove stinger mechanism by scraping with a straight edge and do not squeeze venom sac
 - o If possible, try to bring the spider for identification and recognize prior history of allergy to bite/sting
 - o Black Widow spider bites have minimal pain initially but may develop muscular pain and severe abdominal pain
 - o Brown Recluse spider bites are painless to minimally painful. Little reaction is noted initially but tissue necrosis at the site of the bite develops over the next few days
- **SNAKE:**
 - o Venomous snakes in this area are generally of the pit viper family: rattlesnake, copperhead, etc.
 - o A "dry bite" without envenomation can occur in a significant percentage of cases (50% in coral snake, 25% from pit viper).
 - o Mark a spot above and below the bite, note the time and repeat the measurement every 10 to 15 minutes during transport
 - o Contact closest facility regarding available anti-venom
 - o DO NOT apply tourniquets
- **MAMMAL:**
 - o Human bites have a very high risk of infection due to oral bacteria
 - o Carnivore bites are much more likely to become infected and some may have risk of Rabies exposure
 - o Cat and/or dog bites may rapidly progress to infection due to a specific bacteria
 - o Anyone found sleeping in a room with a bat should be evaluated for consideration of rabies vaccinations

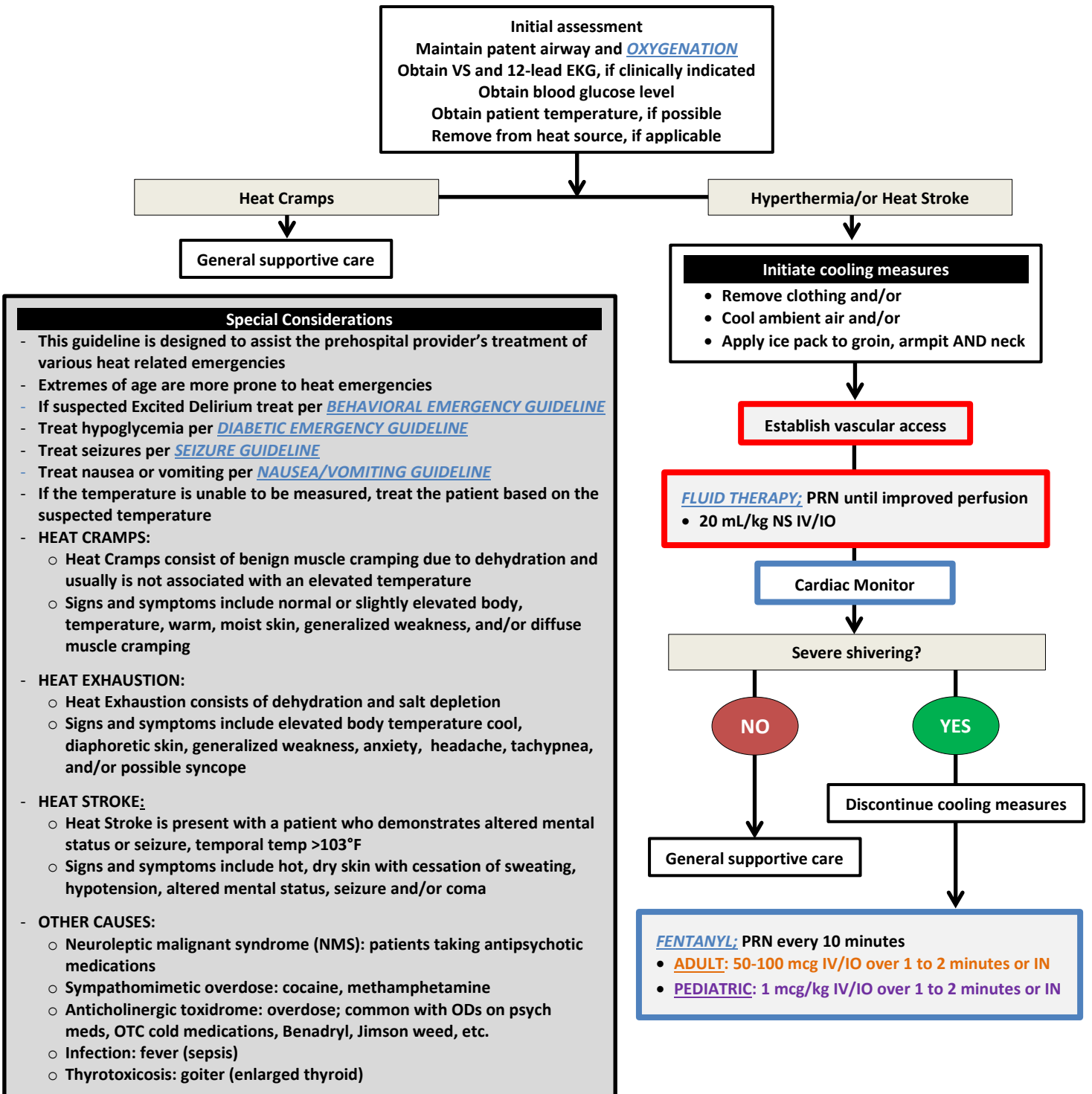
High Altitude Emergencies

Description

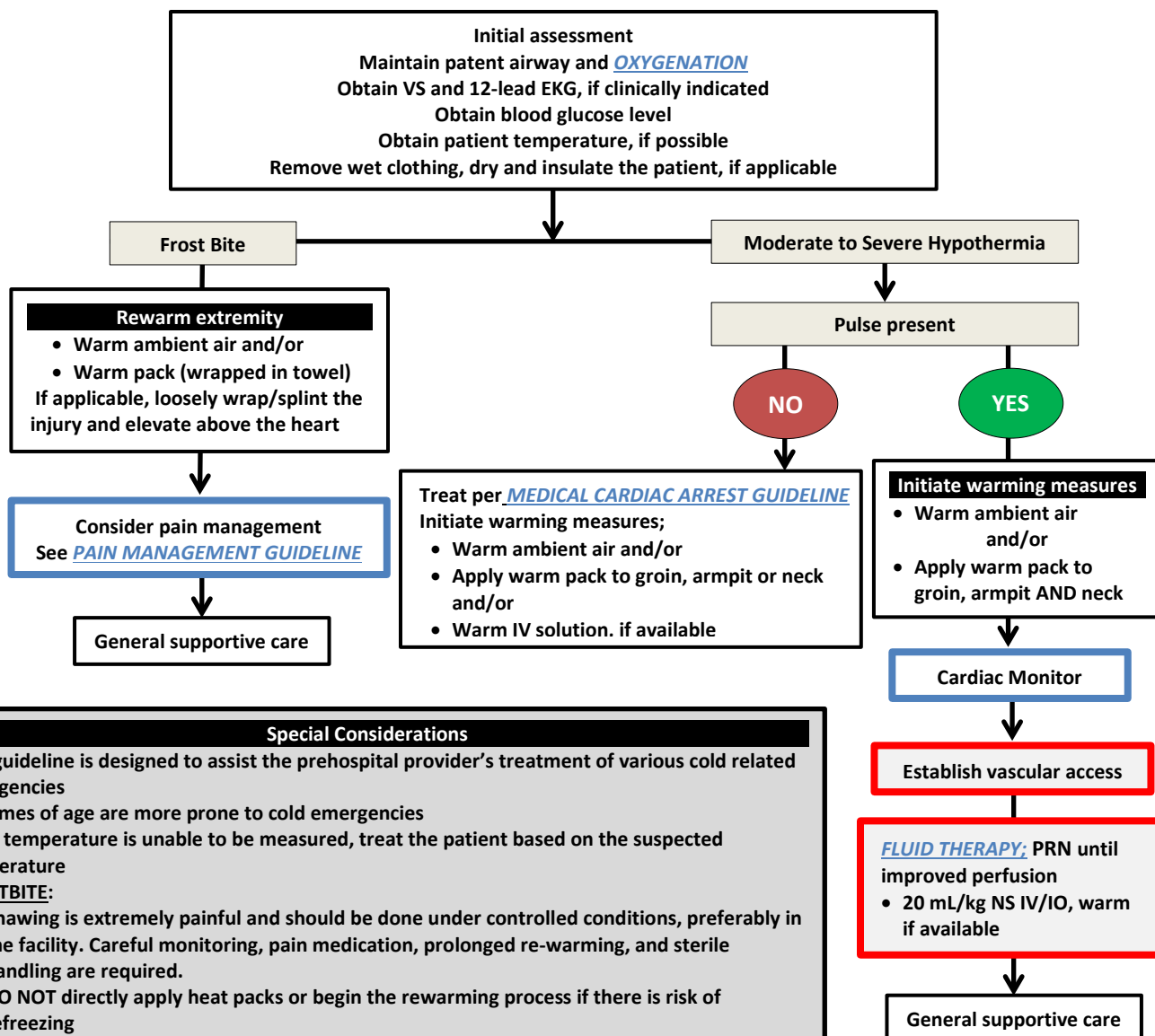
- a. This guideline is designed to assist the prehospital provider's treatment of various high altitude emergencies
- b. Acute exacerbations of chronic medical illness at altitude are more common than altitude illness
- c. Although there are some nuances to each individual sickness the general treatment is predominantly the same and includes: maintain airway patency, consider antiemetic, descent, and if needed transport to the closest appropriate facility
 - The mainstay of treatment is descent from altitude. Even a loss of 2,000-3,000 feet makes enough difference in the O₂ content of air that symptoms may be relieved or stop progressing.
 - Oxygen administration can also relieve symptoms and may allow more time for orderly evacuation
- d. Recognition of the problem is the most critical part of treating high altitude emergencies and usually is out of proportion to those being experienced by the rest of the party. Healthy individuals are at a high risk for the following;
- e. Acute Mountain Sickness (AMS):
 - Is the most frequent type of altitude sickness encountered and can begin to appear at around 6,500 ft. above sea level, although most people will tolerate up to 8000 ft. without difficulty.
 - Altitude illness should **NOT** be suspected below 6,500 ft
 - Symptoms often manifest themselves and generally subside in one to two days, but they occasionally develop into the more serious conditions.
 - AMS is a diagnosis of exclusion; **ALL** other possible causes of symptoms should be evaluated
 - Symptoms include headache, insomnia, anorexia, nausea, and fatigue
- f. High Altitude Cerebral Edema (HACE):
 - Is rare at elevations in Colorado; always consider alternative cause of altered mental status
 - Symptoms include ataxia, confusion; headache, neurological deficits, seizures, and coma
 - Cerebral edema may exhibit, with confusion and a stroke-like picture with focal deficits
- g. High Altitude Pulmonary Edema (HAPE):
 - The most effective and reliable treatment is immediate descent and administration of supplemental oxygen as well as CPAP.
 - Symptoms include dyspnea, cough, headache, nausea, and/or fever



Heat Emergencies



Cold Emergencies



Special Considerations

- This guideline is designed to assist the prehospital provider's treatment of various cold related emergencies
- Extremes of age are more prone to cold emergencies
- If the temperature is unable to be measured, treat the patient based on the suspected temperature
- **FROSTBITE:**
 - Thawing is extremely painful and should be done under controlled conditions, preferably in the facility. Careful monitoring, pain medication, prolonged re-warming, and sterile handling are required.
 - DO NOT directly apply heat packs or begin the rewarming process if there is risk of refreezing
 - If available use circulating warm water (108°F) to rewarm extremity
- **HYPOTHERMIA:**
 - Shivering does not occur below 90 °F (32°C). Below this the patient may not feel cold, and occasionally will even undress and appear vasodilated.
 - Hypothermia may produce severe physiologic bradycardia. DO NOT treat heart rate unless profound hypotension unresponsive to fluids
- **CARDIAC ARREST:**
 - With temperature less than 88°F (30°C) ventricular fibrillation is common cause of death. Handle patients gently to reduce this risk and transport immediately for re-warming
 - Detecting a pulse may be difficult, so signs of life and pulse should be checked carefully for 60 seconds
 - Cardiac arrests in hypothermic cases are treated the same, DO NOT withhold medications or defibrillation when indicated

Medication Overview



Description

- a. This guideline is designed to assist prehospital providers in the principles of administration, delivery, and safety of approved medications.
- b. All care, in regard to the administration of medications, assessment, and performance of procedures, shall be provided in accordance with the practitioner's scope of practice, defined by the most recent version of the [COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT 6CCR1015-3, CHAPTER 2.](#)
 - As such, specific care guidelines will **NOT** be delineated within these guidelines, **EXCEPT** to denote restrictions on the scope of practice.

Special Considerations

- a. The appropriate process for safe medication administration includes:
 - Confirmation of the **"Six Rights"** of (patient, drug, dose, route, time, documentation)
 - Closed loop communication
 - Cross-check with another prehospital provider to verify appropriateness of medication including routes
- b. For pediatrics, reference Pediatric Field Guide or approved apps
- c. There are several types of errors that can occur when administering medications and can relate to the prehospital providers knowledge of misuse, underuse, and overuse. EMS agencies should work to establish a system of Just Culture; this is an approach to work place safety that assumes humans, despite their best intentions to do the right thing, will make mistakes. This ideology, combined with a robust quality improvement program that promotes accurate, honest reporting, can limit mistakes.
 - Self-reporting medication and/or procedure errors is critical to the improvement of the system. It is **NOT** used as a pathway to punitive measures, but rather helps identify potential system improvements and is highly encouraged.
 - A report of a medication error will be reviewed through the QA/CQI process and should be treated with respect and focus on identifying a root cause.
- d. Medications that are on back order or considered to be on a "shortage" will be dealt with on a case by case basis, including potential alternatives and/or use of the particular medication past its expiration date.
- e. At any time the prehospital provider can lower the recommended dose of any medication as long as it is justified in the patient care report.
 - Potential reasons include but are not limited to liver or kidney failure, age, weight, and/or potential interactions with other medications.
- f. An EMT-IV may, under the supervision and authorization of the medical director, administer medications and classes of medications which exceed those listed in Appendices B and D of these rules for an EMT-IV under the **DIRECT VISUAL SUPERVISION** of a paramedic **WHEN** the following conditions have been established:
 - The patient **MUST** be in cardiac arrest or in extremis (defined as at the point of death)
 - At no time can the EMT provider administer controlled substances, even if delegated by the Paramedic.

Pregnancy Risk Category

- a. The FDA established five letter risk categories to indicate the potential of a drug to cause birth defects if used during pregnancy. They were determined by assessing the reliability of documentation and the risk to benefit ratio.

FDA Pregnancy Drug Classes	
CLASS	DESCRIPTION
Category A	Adequate and well-controlled studies have failed to demonstrate a risk to the fetus in the first trimester of pregnancy (and there is no evidence of risk in later trimesters).
Category B	Animal reproduction studies have failed to demonstrate a risk to the fetus and there are no adequate and well-controlled studies in pregnant women.
Category C	Animal reproduction studies have shown an adverse effect on the fetus and there are no adequate and well-controlled studies in humans, but potential benefits may warrant use of the drug in pregnant women despite potential risks
Category D	There is positive evidence of human fetal risk based on adverse reaction data from investigational or marketing experience or studies in humans, but potential benefits may warrant use of the drug in pregnant women despite potential risks.
Category X	Studies in animals or humans have demonstrated fetal abnormalities and/or there is positive evidence of human fetal risk based on adverse reaction data from investigational or marketing experience, and the risks involved in use of the drug in pregnant women clearly outweigh potential benefit
Category N	Not classified

Medication Overview

Approved Medication and Routes

Medications	EMT	EMT-IV	EMT-IV (Extremis)	Paramedic	Routes of Administration	EMT	EMT-IV	Paramedic
Adenosine	NO	NO	NO	SO	Aerosolized	YES	YES	YES
Albuterol	SO	SO	SO	SO	Atomized	YES	YES	YES
Amiodarone	NO	NO	NO	SO	Auto-Injector	YES	YES	YES
Aspirin	SO	SO	SO	SO	Buccal	YES	YES	YES
Atropine	NO	NO	NO	SO	Endotracheal Tube (ET)	NO	NO	NO
Atrovent	NO	NO	SO	SO	Extra-abdominal umbilical vein	NO	NO	NO
Calcium	NO	NO	NO	SO	Intradermal	NO	NO	YES
Dexamethasone (decadron)	NO	NO	NO	SO	Intramuscular (IM)	YES	YES	YES
Dextrose	NO	SO	SO	SO	Intranasal (IN)	YES	YES	YES
Diazepam (valium)	NO	NO	NO	SO	Intraosseous (IO)	NO	YES	YES
Diltiazem (Cardizem)	NO	NO	NO	SO	Intravenous (IV) Piggyback	NO	NO	YES
Diphenhydramine (Benadryl)	NO	NO	SO	SO	Intravenous (IV) push	NO	YES	YES
Epinephrine 1:1,000 IM	SO	SO	SO	SO	Nasogastric	NO	NO	YES
Epinephrine IV ONLY	NO	NO	SO	SO	Nebulized	YES	YES	YES
Epinephrine Auto Injector	SO	SO	SO	SO	Ophthalmic	NO	NO	YES
Fentanyl	NO	NO	NO	SO	Oral (PO)	YES	YES	YES
Glucagon	NO	NO	SO	SO	Rectal (PR)	NO	NO	YES
Hydromorphone (dilaudid)	NO	NO	NO	SO	Subcutaneous (SC)	NO	NO	YES
Hydroxocobalamin (cyanokit)	NO	NO	SO	SO	Sublingual	YES	YES	YES
IV Solutions	NO	SO	SO	SO	Topical	YES	YES	YES
Ketamine	NO	NO	NO	SO	Use of mechanical infusion pumps	NO	NO	YES
Magnesium sulfate	NO	NO	NO	SO				
Midazolam (versed)	NO	NO	NO	SO				
Naloxone (narcen) IN	SO	SO	SO	SO				
Naloxone (narcen) injection	NO	SO	SO	SO				
Neo synephrine	SO	SO	SO	SO				
Nitroglycerin (patient assisted)	NO	NO	NO	NO				
Ondansetron (Zofran) ODT	SO	SO	SO	SO				
Ondansetron (Zofran) IV	NO	SO	SO	SO				
Oral Glucose	SO	SO	SO	SO				
Oxygen	SO	SO	SO	SO				
Rocuronium	NO	NO	NO	SO				
Sodium bicarbonate	NO	NO	NO	SO				
Succinylcholine	NO	NO	NO	SO				
Topical ophthalmic anesthetics	NO	NO	NO	SO				
Vaccines	NO	NO	NO	SO				
Vecuronium	NO	NO	NO	SO				

Adenosine (Adenocard)

Provider Level	1 st Dose	Repeat Dose
EMT	NO	NO
EMT-IV	NO	NO
Paramedic	SO	SO

Description

- Adenosine transiently blocks conduction through the AV node thereby terminating reentrant tachycardias involving the AV node. It is the drug of choice for AV nodal reentrant tachycardia (AVNRT, often referred to as "PSVT"). It will not terminate dysrhythmias that do not involve the AV node as a reentrant limb (e.g. atrial fibrillation).

Onset & Duration

- Onset: Immediate
- Duration: 10 seconds

Indications

- Narrow complex supraventricular tachyarrhythmia

Contraindications

- Patients with second or third degree A–V block or sick sinus syndrome; underlying blocks or conduction defects can be associated with prolonged sinus arrest when using adenosine
- Any irregular tachycardia. Specifically never administer to an irregular wide-complex tachycardia, which may be lethal.

Adverse Reactions

- Chest, jaw or throat pain and shortness of breath
- Flushing lightheadedness, and palpitations

Dosage & Administration

- Adult**: 12 mg rapid bolus IV/IO, combined with a 20 mL NS flush.
 - May repeat once at 12 mg rapid bolus IV/IO
- Pediatric**: 0.2 mg/kg rapid bolus IV/IO (max of 12 mg), combined with a 20 mL NS flush.
 - May repeat once at 0.2 mg/kg (max of 12 mg) rapid bolus IV/IO.

Special Considerations

- Pregnancy Class C
- Carbamazepine (Tegretol®) may potentiate the AV-nodal blocking effect of adenosine.
- Continuous EKG monitoring and a 12-lead EKG should be performed and documented before and after
- Transient asystole and AV blocks are common at the time of administration
- Adenosine is not effective in atrial flutter or atrial fibrillation
- Adenosine is safe in patients with a history of Wolff-Parkinson-White syndrome, if the rhythm is regular and QRS complex is narrow.
 - Never administer adenosine to patients with Wolff-Parkinson-White syndrome associated with atrial fibrillation, instead move to direct [CARDIOVERSION](#)
- May precipitate bronchospasm in patients with reactive airway disease
- May not be effective in heart transplant patients, consider halving the initial dose to avoid potential heart block

Albuterol Sulfate

Provider Level	1 st Dose	Repeat Dose
EMT	SO	SO
EMT-IV	SO	SO
Paramedic	SO	SO

Description

- Albuterol is a selective β -2 adrenergic receptor agonist. It is a bronchodilator and positive chronotrope.
- Because of its β agonist properties, it causes potassium to move across cell membranes inside cells. This lowers serum potassium concentration and makes albuterol an effective temporary treatment for unstable patients with hyperkalemia.

Onset & Duration

- Onset: 5 to 15 minutes
- Duration: 3 to 4 hours

Indications

- Bronchospasm
- Known or suspected hyperkalemia with ECG changes (i.e.: peaked T waves, QRS widening)

Contraindications

- Severe tachycardia (Relative contraindication)

Adverse Reactions

- Tachycardia, palpitations, tremors, anxiety, dysrhythmias

Dosage & Administration

- Single Dose Neb
 - Adult and Pediatric >2**: Albuterol sulfate solution 0.083% (2.5 mg in 3 mL) by nebulizer
 - Repeat as needed every 10 minutes
 - Pediatric <2**: Mix 1.5 mL (half of one unit dose bottle of 3 mL premixed solution) with 2 mL of saline
 - Repeat as needed every 10 minutes
- Continuous Neb
 - Adult**: In more severe cases, place 3 premixed containers of albuterol (2.5 mg/3mL) for a total dose of 7.5 mg in 9 mL, into an oxygen-powered nebulizer and run a continuous neb at 6-8 lpm
 - Pediatric**: **NOT ALLOWED**
- Hyperkalemia
 - Adult**: 10 mg (in 12 mL) via nebulizer, administered back-to-back; **MAX** 20 mg
 - Pediatric**: **NOT ALLOWED**

Special Considerations

- Pregnancy Category C
- Can combine with atrovent
- β -blockers may antagonize albuterol
- Consider in-line nebulized albuterol for patients requiring endotracheal intubation or CPAP due to severe respiratory distress.

Amiodarone

Provider Level	1 st Dose	Repeat Dose
EMT	NO	NO
EMT-IV	NO	NO
Paramedic	SO	SO

Description

- Amiodarone has multiple effects with a quick onset. It is a complex, wide-spectrum medication which is typically categorized as a Class III antiarrhythmic due to its lengthening of the effective refractory period by prolongation of the action potential duration. However, it also demonstrates strong sodium channel antagonism, some calcium and potassium channel inhibition, and noncompetitive blockade of alpha and beta-adrenergic receptors.

Onset & Duration

- Onset: Within minutes
- Duration: Serum concentrations drop to 10% within 30 to 45 minutes and half-life of up to 50 days

Indications

- Pulseless arrest in patients with shock-refractory or recurrent VF/VT
- Regular Wide complex tachycardia **NOT** requiring immediate cardioversion due to hemodynamic instability

Contraindications

- 2nd or 3rd degree AV block
- Cardiogenic shock
- Ventricular escape beats or accelerated idioventricular rhythms
- Irregular wide complex tachycardia of unknown origin

Adverse Reactions

- Hypotension
- Bradycardia

Dosage & Administration

- Adult:**
 - VF/VT Cardiac Arrest: 300 mg IV/IO bolus
 - May give additional 150 mg IV/IO bolus after every 3 to 5 minutes if recurrent VF/VT;
 - MAX** 450 mg
 - Symptomatic (hemodynamically stable) VT and/or undifferentiated wide complex tachycardia with a pulse: 150 mg IV/IO over 10 minutes.
 - Mix 150 mg in a 50 mL NS for ease of delivery.
 - NOT** repeated
- Pediatric:**
 - VF/VT Cardiac Arrest: 5 mg/kg IV/IO bolus
 - Repeat every 3 to 5 minutes; **MAX** 15 mg/kg

Special Considerations

- Pregnancy Category D
- Amiodarone causes prolongation of the QT interval and may induce Torsades de Pointes. This effect may be exacerbated in the presence of other medications that cause QT prolongation (i.e., procainamide, etc.).
- Consider continuous 12 lead ECG monitoring, when possible
- Amiodarone is preferred to adenosine for treatment of undifferentiated stable wide-complex tachycardia with a pulse

Aspirin

Provider Level	1 st Dose	Repeat Dose
EMT	SO	NO
EMT-IV	SO	NO
Paramedic	SO	NO

Description

- Aspirin (Acetylsalicylic Acid) inhibits platelet aggregation and blood clotting and is indicated for treatment of acute coronary syndrome in which platelet aggregation is a major component of the pathophysiology. It is also an analgesic and antipyretic.

Onset & Duration

- Onset: 5 to 30 minutes
- Duration: 3 to 6 hours

Indications

- Symptoms secondary to suspected acute coronary syndrome

Contraindications

- Patients who have experienced signs of severe allergic reaction or anaphylaxis with the use of aspirin

Adverse Reactions

- Rash, gastrointestinal ulcerations, abdominal pain, upset stomach, heartburn, drowsiness, headache, cramping, nausea, gastritis, and bleeding.

Dosage & Administration

- Adult**: 2 to 4 chewable tablets (162 to 324 mg) to a total dose 324 mg PO
 - NOT** repeated
- Pediatric**: **NOT ALLOWED**

Special Considerations

- Pregnancy Category D if full dose aspirin is taken in the 3rd trimester
- Patients with suspected acute coronary syndrome taking warfarin (Coumadin), clopidogrel etc, can be administered aspirin.
- (Plavix) or other oral anticoagulants may still be given aspirin

Atropine Sulfate

Provider Level	1 st Dose	Repeat Dose
EMT	NO	NO
EMT-IV	NO	NO
Paramedic	SO	SO

Description

- Atropine is an endogenous antimuscarinic, anticholinergic substance. It is the prototypical anticholinergic medication with the following effects:
 - Increased heart rate and AV node conduction
 - Urinary retention
 - Pupillary dilation (mydriasis)
 - Decreased sweat, tear and saliva production (Antisialogogue properties) and GI motility

Onset & Duration

- Onset: Immediate
- Duration: 4 hours

Indications

- Symptomatic bradycardia
- Suspected beta blocker overdose
- As an antidote for certain insecticide exposures (e.g., organophosphates) or suspected nerve gas with symptoms of excess cholinergic stimulation.
- Extreme salivation post ketamine administration

Contraindications

- None in the emergency setting

Adverse Reactions

- Anticholinergic toxidrome in overdose

Dosage & Administration

- Bradycardia
 - Adult**: 0.5 mg bolus IV/IO, every 3 to 5 minutes; **MAX** 3 mg
 - Pediatric**: 0.02 mg/kg bolus IV/IO; **MAX** single dose 0.5 mg; May repeat once
- Suspected beta blocker OD
 - Adult**: 1 mg bolus IV/IO bolus, every minute until symptom resolution
 - Pediatric**: 0.02 mg/kg bolus IV/IO bolus, every minute until symptom resolution
- Extreme salivation
 - Adult**: 0.5 mg bolus IV/IO; **NOT** repeated
 - Pediatric**: 0.02 mg/kg bolus IV/IO; **MAX** single dose 0.5 mg; **NOT** repeated
- Organophosphate Poisoning
 - Adult**: 2 mg bolus IV/IO, every minute as needed for symptom resolution
 - Pediatric**: 0.05 mg/kg bolus IV/IO, every minute as needed for symptom resolution

Special Considerations

- Pregnancy Class C
- Maybe ineffective in patients with a heart transplant
- Bradycardias in the setting of an acute MI are common and may be beneficial. **DO NOT** treat unless there are signs of poor perfusion (low blood pressure, mental confusion).
- Pediatric bradycardias are most commonly secondary to hypoxia. Correct the ventilation first. Treat with atropine **ONLY** if improved ventilation **DOES NOT** increase the rate.
- Contact receiving facility early if suspected chemical exposure

Ipratropium Bromide (Atrovent)

Provider Level	1 ST Dose	Repeat Dose
EMT	NO	NO
EMT-IV	NO	NO
Paramedic	SO	SO

Description

- An anticholinergic agent which inhibits interaction of acetylcholine at parasympathetic receptor sites on the bronchial smooth muscle.

Onset & Duration

- Onset: Within 3 minutes
- Duration: 6 hours

Indications

- Adjunct bronchodilator for asthma, chronic bronchitis, allergy/anaphylaxis, and emphysema which is not being adequately controlled by a beta adrenergic agent such as albuterol.

Contraindications

- Patients with history of hypersensitivity to the drug

Adverse Reactions

- Anticholinergic symptoms

Dosage & Administration

- Adult**: 0.5 mg given with albuterol in nebulizer
 - Repeat as needed every 15 minutes
- Pediatric**: 0.25 mg given with albuterol in nebulizer
 - Repeat as needed every 15 minutes

Special Considerations

- Pregnancy Category B
- Can combine with albuterol
- It is safe to administer to patients with known or suspected peanut allergy

Calcium

Provider Level	1 st Dose	Repeat Dose
EMT	NO	NO
EMT-IV	NO	NO
Paramedic	SO	SO

Description

- a. Calcium is a cardioprotective agent in the setting of severe hyperkalemia:
 - Increased contractility
 - May increase ventricular automaticity
 - Decrease heart rate
 - Produces effects similar to and additive with those of digitalis

Onset & Duration

- a. Calcium Chloride
 - Onset: 5 to 15 minutes
 - Duration: Dose dependent up to 4 hours
- b. Calcium Gluconate
 - Onset: Immediate
 - Duration: 30 minutes to 2 hours

Indications

- a. Hyperkalemia
- b. Severe crush injuries
- c. Adult pulseless arrest associated with any of the following clinical conditions:
 - Known hyperkalemia
 - Renal failure with or without hemodialysis history
 - Suspected calcium channel blocker toxicity
- d. Hydrofluoric Acid burns (calcium gluconate)
- e. Calcium channel blocker overdose with hypotension and bradycardia
- f. Beta blocker overdose with hypotension and bradycardia **REFRACTORY** to Glucagon **AND** vasopressor

Contraindications

- a. Known hypercalcemia
- b. Not indicated for routine treatment of pulseless arrest
- c. In the setting of digoxin toxicity, calcium may worsen cardiovascular function

Adverse Reactions

- a. Extravasation of calcium salts will cause necrosis of tissue
- b. Rapid injection of calcium gluconate may cause vasodilatation, decreased blood pressure, bradycardia, cardiac arrhythmias, syncope and cardiac arrest. Administer slowly (no faster than 2 mL/min) and stop if patient complains of distress.
- c. Calcium gluconate will precipitate if mixed with sodium bicarbonate. Multiple vascular access sites preferred, but if not available, flush catheter thoroughly before administering one medication after another.
- d. Do **NOT** combine or administer with sodium bicarbonate within the same vascular access line (incompatible)

Calcium

Dosage & Administration

- a. Calcium Chloride 10%
 - **Adult:**
 - i. Hyperkalemia or Calcium/Beta Channel Blocker Overdose: 1 gram slow bolus over 2 to 5 minutes IV/IO.
 - May repeat dose every 10 minutes for total of three (3) doses.
 - ii. Severe Crush Injury and/or Cardiac Arrest from Suspected Hyperkalemia: 1 gram rapid bolus IV/IO
 - **Pediatric:**
 - i. Calcium/Beta Channel Blocker Overdose: 20 mg/kg slow bolus over 2 to 5 minutes IV/IO, **NOT** to exceed 1 gram.
 - May repeat every 10 minutes for total of three (3) doses.
 - ii. Severe Crush Injury and/or Cardiac Arrest from Suspected Hyperkalemia:
 - **NOT ALLOWED**
- b. Calcium Gluconate 10%
 - **Adult:**
 - i. Hyperkalemia or Calcium/Beta Channel Blocker Overdose: 3 grams slow bolus over 2 to 5 minutes IV/IO.
 - May repeat dose every 10 minutes for total of three (3) doses.
 - ii. Severe Crush Injury and/or Cardiac Arrest from Suspected Hyperkalemia: 3 grams rapid bolus IV/IO
 - iii. Hydrofluoric burn: Commercially prepared, or mixed with water soluble lubricant. Apply topically to affected area.
 - First line treatment in hydrofluoric acid burns
 - **Pediatric:**
 - i. Calcium/Beta Channel Blocker Overdose: 60 mg/kg, **NOT** to exceed 1 gram slow bolus over 2 to 5 minutes IV/IO.
 - May repeat every 10 minutes for total of three (3) doses.
 - ii. Severe Crush Injury and/or Cardiac Arrest from Suspected Hyperkalemia:
 - **NOT ALLOWED**
 - iii. Hydrofluoric burn: Commercially prepared, or mixed with water soluble lubricant. Apply topically to affected area.
 - First line treatment in hydrofluoric acid burns

Special Considerations

- a. Pregnancy Category C
- b. Calcium chloride contains three times the amount of elemental calcium in the same volume of calcium gluconate
- c. Monitor vascular access patency closely, make sure to flush after administration with normal saline

Dexamethasone (Decadron)

Provider Level	1 ST Dose	Repeat Dose
EMT	NO	NO
EMT-IV	NO	NO
Paramedic	SO	NO

Description

- It is a synthetic steroid that suppresses acute and chronic inflammation and may alter the immune response. In addition, it potentiates vascular smooth muscle relaxation by beta-adrenergic agonists and may alter airway hyperactivity.

Onset & Duration

- Onset: Within 5 to 10 minutes
- Duration: Up to 72 hours

Indications

- Moderate to severe allergic reaction or anaphylaxis
- Severe asthma
- COPD Exacerbation
- Suspected Croup with resting stridor **ONLY**
- Suspected Addisonian crisis (cardiovascular collapse in patient at risk for adrenal insufficiency)

Contraindications

- Known hypersensitivity

Adverse Reactions

- Gastrointestinal bleeding (in oral doses only)
- Hypertension
- Hyperglycemia

Dosage & Administration

- Adult**: 10 mg bolus IV/IO/IM/PO
 - NOT** repeated
- Pediatric**: 4 mg bolus IV/IO/IM/PO
 - NOT** repeated

Special Considerations

- Pregnancy Category C
- It is not considered a first line drug; **DO NOT** delay transport to administer this drug
- If administering orally consider mixing it with juice or water

Dextrose (Intravenous)



Provider Level	1 st Dose	Repeat Dose
EMT	NO	NO
EMT-IV	SO	SO
Paramedic	SO	SO

Description

- Glucose is the body's basic fuel and is required for cellular metabolism
- Glucose is distributed in the tissues and provides a prompt increase in circulating blood sugar.
- Glucose use is regulated by insulin, which stimulates storage of excess glucose from the bloodstream, and by glucagon, which mobilizes stored glucose into the bloodstream.

Onset & Duration

- Onset: 1 minute
- Duration: Varies on degree of hypoglycemia

Indications

- Any clinical condition of concern for hypoglycemia and blood glucose reading less than 60 mg/dL

Contraindications

- Intracranial or intraspinal hemorrhage with blood glucose reading ≥ 60 mg/dL (relative)
- Severe traumatic brain injuries with blood glucose reading ≥ 60 mg/dL

Adverse Reactions

- Dextrose is generally free of side effects for most patients and should be used whenever a question of hypoglycemia exists.
- Extravasation may cause tissue necrosis; if extravasation does occur, immediately stop administration and apply a cold compress.

Dosage & Administration

- Adult**
 - 12.5 to 25 grams (50 mL of a 50% solution) IV/IO bolus
 - May repeat up to 25 grams IV/IO if glucose level is < 60 mg/dL with continued altered mental status after 5 to 10 minutes
 - Alternative: 25 grams (250 mL of a 10% solution) IV/IO infusion
- Pediatric**
 - < 13 years: 10 mL/kg of a 10% solution IV/IO bolus
 - To make 10% dextrose: Add 25 grams of dextrose 50% solution to 250 mL (or 50 grams in 500 mL) of normal saline.
 - Administer slowly over 10 minutes or until patient condition improves

Special Considerations

- Pregnancy Category C
- If newborn is symptomatic consider breastfeeding as the initial treatment
- Effect is delayed in elderly people with poor circulation or patients who have been hypoglycemic for a prolonged period of time.
- With profound hypoglycemia and no IV access consider IO insertion
- Monitor vascular access patency closely, make sure to flush after administration with normal saline
- If patient not being transported, assure patient eats complex carbohydrates prior to release of care
- Repeat BGL value every 30 minutes as needed

Diazepam (valium)

Condition	Sedation/Seizure/Pain	
Provider Level	1 st Dose	Repeat Dose
EMT	NO	NO
EMT-IV	NO	NO
Paramedic	SO	SO

Description

- a. It is a benzodiazepine central nervous system depressant that produces sedation

Onset & Duration

- a. Onset: 1 to 5 minutes
- b. Duration: Up to 3 hours

Indications

- a. Seizure
- b. To treat pain due to muscle spasms
- c. Sedation of the severely anxious, agitated, and/or combative patient as a second line to midazolam

Contraindications

- a. Known hypersensitivity
- b. Procedural sedation

Adverse Reactions

- a. Drowsiness, fatigue
- b. Respiratory depression, including apnea
- c. Hypotension and volume-related tachycardia

Dosage & Administration

- a. **Adult:**
 - Comfort Measures: (pain/spasm, anxiety, behavioral sedation)
 - i. Up to 5 mg IV/IO/IM; repeat as needed every 10 minutes; **MAX** dose 10 mg
 - Active seizures:
 - i. 10 mg IV/IO/IM; repeat as needed every 10 minutes
- b. **Pediatric:**
 - Comfort Measures: (pain/spasm, anxiety, behavioral sedation)
 - i. Up to 0.25 mg/kg IV/IO/IM; repeat as needed every 10 minutes; **MAX** dose 5 mg
 - 1. **MAX** single dose 5 mg
 - Active Seizures:
 - i. 0.5 mg/kg IV/IO/IM; repeat as needed every 10 minutes
 - 1. **MAX** single dose 10 mg

Special Considerations

- a. Pregnancy Class D
- b. Strongly consider ½ typical dosing in elderly patients or when combining with opioids
- c. Use caution in patients considered hypotensive
- d. Extreme care must be used in the elderly, to very ill patients and to those with limited pulmonary reserve because of the possibility that apnea.

Diltiazem (Cardizem)

Provider Level	1 st Dose	Repeat Dose
EMT	NO	NO
EMT-IV	NO	NO
Paramedic	SO	SO

Description

- Diltiazem is a calcium channel blocker used in the treatment of certain types of tachyarrhythmias. It relaxes the smooth muscles in the walls of arteries, causing systemic vasodilatation. Its' negative dromotropic properties at both the SA and AV node, coupled with its moderately negative inotropic effects make diltiazem a favorable medication for heart rate control with less severe side effects than those commonly demonstrated by other medications of this class.

Onset & Duration

- Onset: 2 to 5 minutes
- Duration: Less than 8 hours

Indications

- Reentrant narrow complex supraventricular tachydysrhythmias.
- Atrial fibrillation or atrial flutter with a rapid ventricular response

Contraindications

- Patients with sick sinus syndrome or AV heart block in the absence of a functioning artificial pacemaker.
- Any wide QRS tachycardia resulting from a poisoning or drug overdose, ventricular tachycardia, or Wolf-Parkinson-White (WPW) syndrome associated with either atrial flutter or atrial fibrillation.
- Hypotension <100 systolic

Adverse Reactions

- Transient drops in blood pressure are expected.
- Patients with preexisting nodal disease can develop sinus arrest, increased AV block, complete heart block, and asystole.
- The administration of diltiazem to the patient in ventricular tachycardia may result in ventricular fibrillation and death.

Dosage & Administration

- Adult**: 20 mg IV/IO slow bolus over 2 to 5 minutes.
 - May repeat after 15 minutes at 25 mg IV/IO slow bolus over 2 to 5 minutes.
- Pediatric**: **NOT ALLOWED**

Special Considerations

- Pregnancy Class C
- Monitor patient closely in those patients who are taking oral beta-blockers
- Should be used with great caution in patients prone to diminished cardiovascular preload

Diphenhydramine (Benadryl)

Provider Level	1 ST Dose	Repeat Dose
EMT	NO	NO
EMT-IV	NO	NO
Paramedic	SO	NO

Description

- Diphenhydramine is an antihistamine which blocks the action of histamines released from cells during an allergic reaction. It has direct CNS effects, which may be stimulant, or more commonly depressant, depending on individual variation. Diphenhydramine also has an anticholinergic and antiparkinsonian effect which is used to treat acute dystonic reactions to antipsychotic or antiemetic medications (e.g. Haldol®, Thorazine®, Reglan®, Compazine®, Inapsine®).

Onset & Duration

- Onset: Within 1 minute
- Duration: 6 to 12 hours

Indications

- General allergic reaction
- Anaphylaxis
- Dystonic medication reactions or akathisia (agitation or restlessness)

Contraindications

- None in the emergency setting

Adverse Reactions

- Drowsiness
- Dilated pupils
- Dry mouth and throat
- Flushing

Dosage & Administration

- Adult**: 50 mg bolus IV/IO over 2 minutes or IM/PO
 - NOT** repeated
- Pediatric**: 2 mg/kg bolus IV/IO over 2 minutes or IM/PO
 - NOT** to exceed 50 mg
 - NOT** repeated

Special Considerations

- Pregnancy Category B
- May potentiate the effects of alcohol or other depressants
- MAO inhibitors may prolong and intensify anticholinergic effects of antihistamines
- In high doses (overdose), prolonged QT and seizures may occur

Epinephrine



Epinephrine (1:1,000) IM			Epinephrine (1:1,000 or 1:10,000) IV/IO			Epinephrine (1:1,000) Nebulized		
Provider Level	1 st Dose	Repeat Dose	Provider Level	1 st Dose	Repeat Dose	Provider Level	1 st Dose	Repeat Dose
EMT	SO	SO	EMT	NO	NO	EMT	NO	NO
EMT-IV	SO	SO	EMT-IV	NO	NO	EMT-IV	NO	NO
Paramedic	SO	SO	Paramedic	SO	SO	Paramedic	SO	SO

Description

- Catecholamine with alpha (α) and beta (β) effects

Onset & Duration

- Onset: Immediate
- Duration: 3 to 5 minutes

Indications

- Cardiac Arrest (Medical)
- Uncompensated Shock
- Anaphylaxis/Allergic Reaction
- Asthma
- Croup with resting stridor **ONLY**

Contraindications

- Hypovolemic and/or hemorrhagic shock

Adverse Reactions

- Angina pectoris or myocardial infarction
- Anxiety, tremors, palpitation, and headache

Dosage & Administration

Indication	Concentration and Route	Adult Dose
Cardiac Arrest	Epi 1:10,000 IV/IO	1 mg • Repeat every 3 to 5 minutes; MAX 3 doses for the entire arrest OR • 2 mg in 500 mL NS bag wide open on an pressure infusion pump (BP cuff at 300 mmHG) humeral head IO site ONLY ▪ This can be either 1:1,000 or 1:10,000 concentration.
Allergic Reaction/ Anaphylaxis • Signs of poor perfusion or Asthma	Epi 1:1,000 IM	0.3 mg (0.3 mL) • Repeat as needed every 5 minutes
Croup	Epi 1:1,000 Nebulized	5 mg (5 mL) • Repeat as needed AFTER 30 minutes
Uncompensated Shock or Severe Asthma - Anaphylactic - Septic - Cardiogenic - Neurogenic	Mix: Inject 1 mg of epi (<i>either concentration</i>) into 1,000 mL Normal Saline bag or 0.5 mg in 500 mL NS to achieve • 1 mcg/mL concentration • Attach to a Macro drip set	IV/IO infusion wide open to gravity Continuously reassess BP until titrated effect • BP > 90 systolic, and/or return of distal pulses, and/or improved mental status

Epinephrine

Indication	Concentration and Route	Pediatric Dose
Cardiac Arrest	Epi 1:10,000 IV/IO	0.01 mg/kg (0.1 mL/kg) <ul style="list-style-type: none"> • MAX sing dose 1 mg (10 mL) • Repeat every 3 to 5 minutes; MAX 3 doses for the entire arrest
Allergic Reaction/ Anaphylaxis <ul style="list-style-type: none"> • Signs of poor perfusion or Asthma 	Epi 1:1,000 IM	0.01mg/kg (0.01 mL/kg) <ul style="list-style-type: none"> • MAX single dose 0.3 mg (0.3 mL) • Repeat as needed every 5 minutes
Croup	Epi 1:1,000 Nebulized	0.5 mg/kg (0.5 mL/kg) <ul style="list-style-type: none"> • MAX single dose 5 mg (5 mL) • Repeat as needed AFTER 30 minutes
Bradycardia with Shock	Epi 1:10,000 IV/IO	0.01mg/kg (0.1 mL/kg) <ul style="list-style-type: none"> • Repeat every 3 to 5 minutes
Uncompensated Shock or Severe Asthma <ul style="list-style-type: none"> - Anaphylactic - Cardiogenic - Neurogenic 	Mix: Inject 1 mg of epi (<i>either concentration</i>) into 1,000 mL Normal Saline bag or 0.5 mg in 500 mL NS to achieve <ul style="list-style-type: none"> • 1 mcg/mL concentration • Attach to a Macro drip set 	IV/IO infusion wide open to gravity Continuously reassess BP until titrated effect <ul style="list-style-type: none"> • \geq Peds Guide recommendation, and/or return of distal pulses, and/or improved mental status

Special Considerations

- Pregnancy Category C
- Auto injector can be administered by **ALL** EMS Personnel via standing order (**SO**)
- Patient's over 40 years of age or with previous cardiac disease/illness should be reassessed often for signs of cardiac compromise.
- If administering 2 mg of epi in a 500 mL bag during cardiac arrest and ROSC is achieved, TKO and titrate to a BP of > 90 systolic
- Do **NOT** combine or administer with sodium bicarbonate within the same vascular access line (incompatible)
- Reasoning for humeral head IO site: ONLY in OHCA is to achieve correct flow rate of epi.**

Fentanyl (Sublimaze)

Provider Level	1 st Dose	Repeat Dose
EMT	NO	NO
EMT-IV	NO	NO
Paramedic	SO	SO

Description

- a. A potent, synthetic-opioid analgesic agent
- b. Depresses the central nervous system and sensitivity to pain

Onset & Duration

- a. Onset: 60 to 90 seconds
- b. Duration: 30 to 60 minutes

Indications

- a. An analgesic used for the reduction of moderate to severe pain
- b. An analgesic used for post RSI sedation
- c. Treatment of shivering in the heat stroke/hyperthermic patient after rapid cooling

Contraindications

- a. Known hypersensitivity

Adverse Reactions

- a. Respiratory Depression
- b. Bradycardia (rare)
- c. Chest wall rigidity has been reported with rapid administration of fentanyl

Dosage & Administration

- a. Adult:
 - 50-100 mcg bolus IV/IO administered over 1 to 2 minutes; IM/IN
 - Repeat every 10 minutes as needed
- b. Pediatric:
 - 1 mcg/kg bolus IV/IO administered over 1 to 2 minutes; IM/IN
 - Repeat every 10 minutes as needed

Special Considerations

- a. Pregnancy Category C
- b. Use caution in patients with hemodynamic instability, respiratory depression or shock
- b. Watch for synergistic effects when given with other CNS depressing medications
- c. May cause nausea and vomiting, administer slowly and consider an antiemetic
- d. Strongly consider ½ typical dosing in elderly patients or when combining with benzodiazepines

Glucagon

Condition	Hypoglycemia		Beta/Calcium Channel Blocker Overdose	
	1 st Dose	Repeat Dose	1 st Dose	Repeat Dose
EMT	NO	NO	NO	NO
EMT-IV	NO	NO	NO	NO
Paramedic	SO	SO	SO	SO

Description

- A naturally occurring hormone within the human body that works opposite from insulin and increases concentration of glucose in the bloodstream. Glucagon also causes smooth muscle relaxation and increases myocardial contractility.

Onset & Duration

- Onset: Within 20 minutes for hypoglycemia, 5 minutes for Beta/Calcium Blocker Overdose, and 8 to 10 minutes for Esophageal Spasms
- Duration: Varies depending on route administered; 15 minutes IV, 1 to 2 hours IM

Indications

- Hypoglycemic patient in which oral dextrose is contraindicated and/or an IV cannot be established
- Calcium channel and/or beta blocker overdose if patient is symptomatic
- Management of food impaction

Contraindications

- Known hypersensitivity

Adverse Reactions

- Nausea and/or vomiting

Dosage & Administration

- Adult:**
 - Food impaction: 1 mg, slow IV/IO push
 - NOT** repeated
 - Hypoglycemia: 1 mg IM
 - NOT** repeated
 - Beta/Calcium Channel Blocker Overdose: Maximum available dose up to 5 mg IV/IO, repeat once if symptoms do not resolve (if available)
- Pediatric:**
 - Food impaction: **NOT ALLOWED**
 - Hypoglycemia: 0.5 mg IM
 - NOT** repeated
 - Beta/Calcium Channel Blocker Overdose: 0.1 mg/kg IV/IO, repeat once if symptoms do not resolve (if available)

Special Considerations

- Pregnancy Category B
- Glucagon will not be effective in reversing hypoglycemia in a patient with no liver glycogen store due to things such as alcoholism or malnutrition.

Hydroxocobalamin (Cyanokit)



Provider Level	1 st Dose	Repeat Dose
EMT	NO	NO
EMT-IV	NO	NO
Paramedic	SO	SO

Description

- Cyanide inhibits cytochrome oxidase, thereby arresting cellular respiration and forcing anaerobic metabolism, which leads to lactate production and acidosis and ultimately death. Hydroxycobalamin binds cyanide ions to form cyanocobalamin which is excreted in urine.

Onset & Duration

- Onset: Rapid
- Duration: Variable

Indications

- Known or suspected cyanide toxicity or exposure

Contraindications

- Known or suspected severe hydrogen cyanide toxicity or exposure
 - Extremis with altered mental status, respiratory failure, poor perfusion, dysrhythmias, chest pain, and/or seizures.

Adverse Reactions

- Hypertension, nausea, headache
- Change in urine and secretion color as well as skin redness
- CO-oximetry including carboxyhemoglobin levels can be inaccurate

Dosage & Administration

- Adult**: 5 grams IV/IO, may repeat once; **MAX** 10 grams
 - Reconstitute the 5 gram vial of hydroxocobalamin with 200 mL of 0.9% normal saline (lactated ringers or D₅W can be substituted if needed).
 - Use the spike on the hydroxocobalamin vial to introduce the normal saline INTO the hydroxocobalamin vial. The line on the hydroxocobalamin vial marks 200 mL.
 - Following the addition of the diluent (normal saline) to the vial, the vial should be repeatedly inverted or rocked (**NOT** shaken) for at **LEAST** 60 seconds prior to infusion.
- Pediatric**: 70 mg/kg IV/IO; **MAX** initial dose 5 grams; **NOT** repeated
 - Reconstitute the calculated amount of hydroxocobalamin with 200 mL of 0.9% normal saline (lactated ringers or D₅W can be substituted if needed)
 - Use the spike on the hydroxocobalamin vial to introduce the normal saline INTO the hydroxocobalamin vial. The line on the hydroxocobalamin vial marks 200 mL.
 - Following the addition of the diluent (normal saline) to the vial, the vial should be repeatedly inverted or rocked (**NOT** shaken) for at **LEAST** 60 seconds prior to infusion.

Special Considerations

- Pregnancy Category C
- Assure separate IV line (this medication cannot be given in the same line as other medications)
- EMT and above can admin if they are at a mine under the Mine Acts

IV Solutions

Provider Level	Administration
EMT	NO
EMT-IV	SO
Paramedic	SO

Description

- a. Volume Expanders (Lactated Ringer's or Normal Saline)
 - These contain sodium as the major cation and expand the intravascular fluid space
 - LR: Isotonic Solution
 - NS: Isotonic Solution
- b. Water Solution (D₅W)
 - Diffuses through three times the body space in comparison to NS and LR; poor volume expander.
 - Hypotonic Solution

Onset & Duration

- a. Onset: Immediate
- b. Duration: Varies dependent of situation

Contraindications

- a. Be cautious in the patient with high suspicion of fluid overload

Indications

- a. Volume Expanders: Expand intravascular volume
- b. Water Solution: Used in conjunction with other IV medication

Adverse Reactions

- a. Fluid overload

Dosage & Administration

- a. Hypovolemia
 - **Adult and Pediatric**: 20 mL/kg for volume expansion, repeat as needed until improved perfusion
- b. Hemorrhagic Shock
 - **Adult and Pediatric**: 10 mL/kg for volume expansion, repeat as needed until restoration of distal pulses, improved mental status and/or permissive hypotension levels reached (80 to 100 systolic)
- c. Septic Shock
 - **Adult and Pediatric**: 30 mL/kg for volume expansion, repeat as needed until improved perfusion
- d. Burn Therapy
 - **Adult**: 500 mL/hr
 - **Pediatric**:
 - i. Age ≥ 14: 500 mL/hr
 - ii. Age 5 to 13: 250 mL/hr
 - iii. Age < 5: 125 mL/hr
- e. Fluid Challenge: 250 to 500 mL bolus with reassessment after each administration

Special Considerations

- a. Pregnancy category C
- b. Watch for pulmonary edema in the cardiac compromised patient
- c. Be cautious in any elderly patient history of renal insufficiency, or congestive heart failure
- d. Watch for infiltration at the site of the IV or IO

Ketamine (Ketalar)

Extreme Agitation

Waivered Medication		
Provider Level	1 st Dose	Repeat Dose
EMT	NO	NO
EMT-IV	NO	NO
Paramedic	SO	SO

Description

- An anesthetic agent with potent analgesic properties and the ability to produce a cataleptic state often referred to as “dissociative analgesia.”

Onset & Duration

- Onset: 30 seconds IV; 3 to 4 minutes IM
- Duration: 10 to 15 minutes IV; 15 to 30 minutes IM

Indications

- Chemical sedation of patients with excited delirium (ExDS)

Contraindications

- Age <13 years old in RSI and/or ExDS
- Known hypersensitivity

Adverse Reactions

- May increase blood pressure, ICP or IOP
- Emergence Delirium (rare)
- Involuntary and tonic-clonic like movements (rare)
- Extreme salivation

Dosage & Administration

- Adult ≥ 13:**
 - 250 to 500 mg IM
 - Contact Medical Control** for repeat doses
- Pediatric < 13:**
 - NOT ALLOWED**

Special Considerations

- Pregnancy Category B
- If extreme salivation after administration, consider administration of [ATROPINE](#)

Ketamine (Ketalar)

Pain Management

Waivered Medication		
Provider Level	1 st Dose	Repeat Dose
EMT	NO	NO
EMT-IV	NO	NO
Paramedic	SO	SO

Description

- An anesthetic agent with potent analgesic properties and the ability to produce a cataleptic state often referred to as “dissociative analgesia.”

Onset & Duration

- Onset: 30 seconds IV; 3 to 4 minutes IM
- Duration: 10 to 15 minutes IV; 15 to 30 minutes IM

Indications

- Analgesic for severe pain

Contraindications

- Known hypersensitivity
- < 7 years old

Adverse Reactions

- May increase blood pressure, ICP or IOP
- Emergence Delirium (rare)
- Involuntary and tonic-clonic like movements (rare)
- Extreme salivation

Dosage & Administration

- Adult:**
 - 30 mg IV/IO or
 - 50 mg IM/IN
 - Repeat as needed every 20 minutes up to 3 **TOTAL** doses.
 - Contact Medical Control** for additional doses.
 - IV/IO Dose: If time allows, add to a 50 mL NS or D₅W bag, administered over 5 to 10 minutes
- Pediatric ≥ 7:**
 - 0.3 mg/kg IV/IO or
 - 0.5 mg/kg IM/IN
 - Repeat as needed every 20 minutes up to 3 **TOTAL** doses.
 - Contact Medical Control** for additional doses.
 - IV/IO Dose: **MUST** be added to a 50 mL NS or D₅W bag, administered over 5 to 10 minutes

Special Considerations

- Pregnancy Category B
- If extreme salivation after administration, consider administration of [ATROPINE](#)

Ketamine (Ketalar)

Rapid Sequence Intubation (RSI)

Waivered Medication		
Provider Level	1 st Dose	Repeat Dose
EMT	NO	NO
EMT-IV	NO	NO
Paramedic	SO	SO

Description

- An anesthetic agent with potent analgesic properties and the ability to produce a cataleptic state often referred to as “dissociative analgesia.”

Onset & Duration

- Onset: 30 seconds IV; 3 to 4 minutes IM
- Duration: 10 to 15 minutes IV; 15 to 30 minutes IM

Indications

- Induction agent during Rapid Sequence Intubation (RSI paramedics **ONLY**)
- Post RSI sedation (RSI paramedics **ONLY**)

Contraindications

- Age < 13 years old in RSI and/or ExDS
- Known hypersensitivity

Adverse Reactions

- May increase blood pressure, ICP or IOP
- Emergence Delirium (rare)
- Involuntary and tonic-clonic like movements (rare)
- Extreme salivation

Dosage & Administration

- Adult ≥ 13:**
 - RSI Induction
 - 200 mg IV/IO
 - Post RSI Sedation
 - 100 mg IV/IO
- Pediatric < 13:**
 - NOT ALLOWED**

Special Considerations

- Pregnancy Category B
- If extreme salivation after administration, consider administration of [ATROPINE](#)

Magnesium Sulfate



Condition	Cardiac/Respiratory		Eclampsia	
Provider Level	1 st Dose	Repeat Dose	1 st Dose	Repeat Dose
EMT	NO	NO	NO	NO
EMT-IV	NO	NO	NO	NO
Paramedic	SO	NO	SO	NO

Description

- Magnesium is a natural element found within the human body that is a cofactor for many enzymatic reactions. Magnesium is essential for the function of the sodium-potassium ATPase pump. It prevents or controls convulsions by blocking neuromuscular transmission. It has a depressant effect on the CNS, acts as a physiological calcium channel blocker, and may reduce the incidence of post infarction ventricular dysrhythmias.

Onset & Duration

- Onset: Immediate
- Duration: 30 minutes

Indications

- Eclampsia
- Polymorphic V-tach (Torsades)
- Asthma not responding to albuterol

Contraindications

- Should not be administered parenterally in patients with heart block

Adverse Reactions

- May produce heart block and diminish reflexes

Dosage & Administration

- Adult:
 - Torsades de Pointes: 2 grams slow bolus over 10 minutes IV/IO unless in cardiac arrest, then rapid push
 - NOT** repeated
 - Status Asthmaticus: 2 grams in 50 mL NS or D₅W IV/IO over 10 minutes
 - NOT** repeated
 - Eclampsia: 5 grams in 50 mL NS or D₅W over 5 to 10 minutes (rapid IV push in cardiac arrest)
 - NOT** repeated
- Pediatric:
 - Status Asthmaticus: 50 mg/kg in 50 mL NS or D₅W over 10 minutes IV/IO
 - NOT** repeated

Special Considerations

- Pregnancy Category D (safe in short term use)
- Pronounced respiratory depression possible so be prepared to intervene
- Pregnant patients **DO NOT** need to be actively seizing to administer, if there was witnessed or highly presumed seizure activity prior to arrival the patient **SHOULD** receive magnesium.

Midazolam (Versed)

Condition	Sedation/Seizure/Pain		Induction for RSI	
Provider Level	1 st Dose	Repeat Dose	1 st Dose	Repeat Dose
EMT	NO	NO	NO	NO
EMT-IV	NO	NO	NO	NO
Paramedic	SO	SO	SO	SO

Description

- a. It is a shorter-acting benzodiazepine central nervous system depressant that produces sedation and lack of recall

Onset & Duration

- a. Onset: 1 to 3 minutes
- b. Duration: 2 to 6 hours

Indications

- a. Status epilepticus
- b. Sedation of the severely anxious, agitated, and/or combative patient
- c. To treat pain due to muscle spasms
- d. Premedication prior to cardioversion
- e. Induction agent during Rapid Sequence Intubation (RSI paramedics **ONLY**)
- f. Post intubation sedation

Contraindications

- a. Known hypersensitivity
- b. Procedural sedation

Adverse Reactions

- a. Respiratory depression, including apnea
- b. Hypotension and volume-related tachycardia

Dosage & Administration

- a. **Adult:**
 - Comfort Measures: (cardioversion, pain/spasm, post intubation sedation, behavioral sedation)
 - i. Up to 5 mg IV/IO/IN/IM; repeat as needed every 10 minutes; **MAX** dose 10 mg
 - Active Seizures:
 - i. 5 mg IV/IO/IN/IM; repeat every 10 minutes as needed
 - RSI Induction:
 - i. 5 mg IV/IO, administered once
- b. **Pediatric:**
 - Comfort Measures: (cardioversion, pain/spasm, post intubation sedation, behavioral sedation)
 - i. Up to 0.1 mg/kg IV/IO/IN/IM; repeat as needed every 10 minutes; **MAX** dose 5 mg
 - 1. **MAX** single dose 5 mg
 - Active Seizures:
 - i. 0.1 mg/kg IV/IO/IN/IM; repeat every 10 minutes as needed
 - 1. **MAX** single dose 5 mg

Special Considerations

- a. Pregnancy Class D
- b. Strongly consider ½ typical dosing in elderly patients or when combining with opioids
- c. Use caution in patients considered hypotensive

Naloxone (Narcan)

Provider Level	1 st Dose	Repeat Dose
EMT	SO IN ONLY	SO IN ONLY
EMT-IV	SO	SO
Paramedic	SO	SO

Description

- a. It is a competitive receptor antagonist

Onset & Duration

- a. Onset: Within 5 minutes
- b. Duration: 1 to 4 hours

Indications

- a. For reversal of suspected opioid induced CNS respiratory depression
- b. Coma WITH impaired reflexes or respiratory depression

Contraindications

- a. Known hypersensitivity

Adverse Reactions

- a. Tachycardia
- b. Nausea and/or vomiting
- c. Pulmonary edema

Dosage & Administration

- a. **Adult**: 0.5 to 1 mg bolus IV/IO/IM/IN, repeat as needed to desired effect
- b. **Pediatric**:
 - **≥20 kg**: 0.5 mg bolus IV/IO/IM/IN and titrate to desired effect up to 2 mg total
 - **<20 kg**: 0.01 mg/kg bolus IV/IO/IM/IN and titrate to desired effect up to 2 mg total
 - **Neonate**: NOT ALLOWED

Special Considerations

- a. Pregnancy Category C
- b. Not intended for use unless respiratory depression or impaired airway reflexes are present. Reversal of suspected mild to moderate opioid toxicity is NOT indicated in the field as it may greatly complicate treatment and transport as narcotic dependent patients may experience violent withdrawal symptoms.
- c. Patients who receive naloxone SHOULD be transported to the hospital for evaluation.
- d. Use with extreme caution in narcotic-dependent patients who may experience withdrawal syndrome
- e. Higher doses may be needed to treat synthetic opioids (i.e. Carfentanil)

Phenylephrine (neosynphrine)

Provider Level	1 st Dose	Repeat Dose
EMT	SO	SO
EMT-IV	SO	SO
Paramedic	SO	SO

Description

- Phenylephrine is an alpha-adrenergic agonist. When administered intranasally, it causes vasoconstriction in the nasal mucosa and subsequently decreased bleeding and nasal decongestion.

Onset & Duration

- Onset: Rapid
- Duration: 20 minutes

Indications

- Nosebleed (epistaxis)

Contraindications

- Known hypersensitivity

Precautions

- Avoid administration into the eyes, which will dilate pupil but not cause any damage

Dosage & Administration

- For patients with active nosebleed, first have patient blow nose to expel clots. Administer 2 sprays to each nostril with patient gently sniffing (if possible) until patient can taste the Afrin.
- Apply digital pressure to the soft nasal portion or nose clip for 20 minutes thereafter; repeat as needed

Special Considerations

- Pregnancy Category C

Nitroglycerin (nitrostat)



Route	Pt Assisted		Tablet/Spray	
Provider Level	1 st Dose	Repeat Dose	1 st Dose	Repeat Dose
EMT	NO	NO	NO	NO
EMT-IV	NO	NO	NO	NO
Paramedic	SO	SO	SO	SO

Description

- a. Short-acting peripheral vasodilator decreasing cardiac preload and afterload

Onset & Duration

- a. Onset: 1 to 3 minutes
- b. Duration: 20 to 30 minutes, variable with paste (up to 12 hours)

Indications

- a. Hypertension control in congestive heart failure associated with pulmonary edema

Contraindications

- a. Hypotension SBP < 100
- b. Recent use of erectile dysfunction (ED) medication within 24 hours of Viagra or Levitra and or 48 hours with Cialis

Adverse Reactions

- a. Hypotension
- b. Syncope
- c. Headache
- d. Tachycardia

Dosage & Administration

- a. **Adult:**
 - Pulmonary Edema:
 - i. **SBP 100 to 120:** 0.4 mg sublingual
 - ii. **SBP 121 to 200:** 0.8 mg sublingual
 - iii. **SBP >200:** 1.2 mg sublingual
 - iv. Repeat 0.4 mg sublingual every 5 minutes PRN titrated to symptoms and blood pressure
- b. **Pediatric:**
 - **NOT ALLOWED**

Special Considerations

- a. Pregnancy Category B
- b. Therapeutic effect is enhanced but adverse effects are increased when patient is upright
- c. It may be effective in relieving chest pain caused by food impaction
- d. It may be effective even in patients using paste, discs, or oral long-acting nitrate preparations
- e. Ideally, IV access and 12-lead should be obtained prior to administration

Ondansetron (Zofran)

Route	ODT		IM/IV/IO/PO	
Provider Level	1 st Dose	Repeat Dose	1 st Dose	Repeat Dose
EMT	SO	SO	NO	NO
EMT-IV	SO	SO	SO	SO
Paramedic	SO	SO	SO	SO

Description

- a. Serotonin 5-HT₃ receptor antagonist
- b. Prevents nausea and vomiting by blocking serotonin

Onset & Duration

- a. Onset: 10 minutes IV, 40 minutes IM, within 30 minutes ODT
- b. Duration: 4 hours

Indications

- a. Nausea or vomiting stemming from any medical or traumatic complaint
- b. Prophylaxis treatment for opioid [PAIN MANAGEMENT](#), [CPAP](#), [SELECTIVE SPINAL SPLINTING](#)
- c. Prophylaxis treatment for any patient with high risk of motion sickness

Contraindications

- a. Known allergy

Adverse Reactions

- a. Headache, dizziness, drowsiness, fatigue
- b. Some patients experience transient blurred vision

Dosage & Administration

- a. **Adult**: 4 mg ODT/IM/PO/IV/IO
 - Repeat as needed every 10 minutes up to **2 TOTAL** doses
- b. **Pediatric**: ≥ 40 kg; 4 mg ODT/IM/PO/IV/IO
 - Repeat as needed every 10 minutes up to **2 TOTAL** doses
- c. **Pediatric**: < 40 kg; 0.1 mg/kg IV/IO/IM/PO
 - Repeat every 10 minutes up to **2 TOTAL** doses

Special Considerations

- a. Pregnancy Category B
- b. Ondansetron can pass into breast milk and may harm nursing baby

Oral Glucose (instaglucoose)

Provider Level	1 st Dose	Repeat Dose
EMT	SO	SO
EMT-IV	SO	SO
Paramedic	SO	SO

Description

- a. Glucose is the body's basic fuel and is required for cellular metabolism
- b. After absorption from GI tract, glucose is distributed in the tissues and provides a prompt increase in circulating blood sugar.

Onset & Duration

- a. Onset: 1 minute
- b. Duration: Varies on degree of hypoglycemia

Indications

- a. Known or suspected hypoglycemia and able to swallow and has a patent airway

Contraindications

- a. Inability to swallow or protect airway
- b. Unable to take oral medications

Adverse Reactions

- a. Nausea

Dosage & Administration

- a. All ages: 1 to 2 full tubes or 15 to 30 grams buccal, repeat as needed every 10 minutes

Special Considerations

- a. Pregnancy Category C
- b. Due to gel thickness, there is a potential for airway obstruction or aspiration
- c. Other sugar sources are acceptable, i.e., fruit juice, candy bar, soda (not diet), etc.
- d. Assure that signs of altered mental status are present and that other causes for the patient's condition have been considered, including hypoxia, stroke, seizure, alcohol intoxication, drug overdose, head injury, etc.

Oxygen

Provider Level	1 st Dose	Repeat Dose
EMT	SO	SO
EMT-IV	SO	SO
Paramedic	SO	SO

Description

- a. Oxygen added to the inspired air increases the amount of oxygen in the blood, and thereby increases the amount delivered to the tissue. Tissue hypoxia causes cell damage and death. Breathing, in most people, is regulated by small changes in the acid-base balance and CO₂ levels. It takes relatively large decreases in oxygen concentration to stimulate respiration.

Onset & Duration

- a. Onset: Immediate
- b. Duration: Variable

Indications

- a. Moderate to severe medical illness or traumatic injury with suspected hypoxia

Contraindications

- a. None in the emergency setting

Adverse Reactions

- a. Hyperoxemia can lead to oxidative injury as well as coronary and cerebral artery constriction.

Dosage & Administration

- a. **Adult** and **Pediatric**: Dose is dependent on presentation and baseline O₂ saturation.
 - Increase oxygen concentration and delivery device to maintain minimum recommended levels of 90% to 98%.

Special Considerations

- a. Pregnancy Category N
- b. Do not withhold oxygen from a COPD patient out of concerns for loss of hypoxic respiratory drive
- c. Hyperoxemia can be detrimental in the acutely injured or ill trauma, myocardial infarction, and or stroke patient, monitor saturations closely.

Rocuronium Bromide (Zemuron)

Waivered Medication		
Provider Level	1 st Dose	Repeat Dose
EMT	NO	NO
EMT-IV	NO	NO
Paramedic	NO	NO
RSI Paramedic	SO	SO

Description

- It is a short-to-intermediate acting skeletal muscle relaxant. It initiates flaccid paralysis by blocking receptors of the motor end plate, rather than binding to them. Effectively, this action blocks neuromuscular transmission of impulses without depolarizing the muscle.
- Due to the non-depolarizing nature of this drug, it has less adverse effects in relation to hyperkalemia and is also remarkably free of the traditional histaminic side effects that characterize most other non-depolarizing skeletal muscle relaxants.

Onset & Duration

- Onset: Flaccid paralysis within 2 minutes
- Duration: Typically 20 minutes but up to 80 minutes

Indications

- First line paralytic agent for RSI
- Maintain paralysis of an intubation patient

Contraindications

- Known hypersensitivity

Adverse Reactions

- Patients with severe renal failure and/or hepatic failure may experience prolonged paralysis when given standard doses of the medication.
- There are few, if any, cardiovascular side effects with the administration of rocuronium.

Dosage & Administration

- Adult**: 100 mg IV/IO
 - Repeat as needed every 20 minutes (maintenance) up to **2 TOTAL** doses
- Pediatric**: **NOT ALLOWED**

Special Considerations

- Pregnancy Category C
- If administering for post RSI maintenance, assure correctly placed endotracheal tube before this medication is administered
- It is important to remember that rocuronium has no ability to sedate or relieve pain, **SEDATION SHOULD BE ADMINISTERED.**

Sodium Bicarbonate

Provider Level	1 st Dose	Repeat Dose
EMT	NO	NO
EMT-IV	NO	NO
Paramedic	SO	SO

Description

- Sodium bicarbonate is an alkalotic solution, which neutralizes acids found in the body. Acids are increased when body tissues become hypoxic due to cardiac or respiratory arrest.

Onset & Duration

- Onset: 10 to 15 seconds
- Duration: 8 to 10 minutes

Indications

- Tricyclic or antihistamine overdose with arrhythmias, widened QRS complex or hypotension
- Significant crush injury requiring prolonged extrication
- Suspected hyperkalemia or hyperkalemic pulseless arrest: consider in patients with known renal failure/dialysis.
- Severe salicylate overdose

Contraindications

- Metabolic and/or respiratory alkalosis
- Hypocalcemia
- Hypokalemia

Adverse Reactions

- Metabolic alkalosis
- Paradoxical cerebral intracellular acidosis
- Sodium bolus can lead to volume overload

Dosage & Administration

- Adult:**
 - Hyperkalemia: 100 mEq slow bolus over 2 to 5 minutes IV/IO of an 8.4% solution
 - Repeat as needed until cessation of seizures or QRS shortens to <100 ms (if applicable)
 - Tricyclic/Antihistamine OD: 100 mEq slow bolus over 2 to 5 minutes IV/IO of an 8.4% solution
 - Repeat as needed until cessation of seizures or QRS shortens to <100 ms (if applicable)
 - In severe cases, consider administering via drip: Mix 150 mEq (150 mL) in 1,000 mL NS and administer at 200 mL/hr
- Pediatric >2 year old:**
 - Hyperkalemia: **NOT ALLOWED**
 - Tricyclic OD: 1 mEq/kg slow bolus over 2 to 5 minutes IV/IO of an 8.4% solution
 - Repeat as needed until cessation of seizures or QRS shortens to <100 ms (if applicable)

Special Considerations

- Pregnancy Category C
- Do **NOT** combine or administer with epinephrine or calcium within the same vascular access line (incompatible)
- Alkalinization of urine may increase half-lives of certain drugs
- Vasopressors may be deactivated

Succinylcholine (Anectine)

Waivered Medication		
Provider Level	1 st Dose	Repeat Dose
EMT	NO	NO
EMT-IV	NO	NO
Paramedic	NO	NO
RSI Paramedic	SO	NO

Description

- It is an ultra short-acting depolarizing-type, skeletal muscle relaxant for intravenous (IV) administration

Onset & Duration

- Onset: Flaccid paralysis within 1 minute
- Duration: 6 to 10 minutes

Indications

- Paralytic agent for RSI (when Rocuronium is **NOT** available)

Contraindications

- Patients with personal or familial history of malignant hyperthermia and/or skeletal muscle myopathies (multiple sclerosis)
- Hypersensitivity

Adverse Reactions

- Cardiac arrest, malignant hyperthermia, arrhythmias, hypertension, and hyperkalemia
- Muscle fasciculation, jaw rigidity, rhabdomyolysis, and excessive salivation.

Dosage & Administration

- Adult**: 200 mg IV/IO
 - NOT** repeated
- Pediatric**: **NOT ALLOWED**

Special Considerations

- Pregnancy Category C
- Succinylcholine **SHOULD** be administered with **GREAT CAUTION** to patients suffering from electrolyte abnormalities and/or those who may have massive digitalis toxicity,
 - In these circumstances it may induce serious cardiac arrhythmias or cardiac arrest due to hyperkalemia
- It is important to remember that succinylcholine has no ability to sedate or relieve pain, **SEDATION SHOULD BE ADMINISTERED.**

Topical Ophthalmic Anaesthetics

Provider Level	1 st Dose	Repeat Dose
EMT	NO	NO
EMT-IV	NO	NO
Paramedic	SO	VO

Description

- Proparacaine and tetracaine are local anesthetics approved for ocular administration for relief of eye pain caused by corneal abrasion or chemical injury.

Onset & Duration

- Onset: 15 to 30 seconds
- Duration: 15 to 20 minutes

Indications

- Pain secondary to eye injuries and corneal abrasions
- Topical anesthetic to facilitate eye irrigation

Contraindications

- Known allergy to local anesthetics or to PABA (para-aminobenzoic acid)-containing products
- Globe lacerations or rupture

Adverse Reactions

- Transient burning/stinging when initially applied

Dosage & Administration

- Adult**: Instill 2 drops into affected eye; repeat as needed every 15 minutes
- Pediatric**: Instill 2 drops into affected eye; repeat as needed every 15 minutes

Special Considerations

- Pregnancy Class B
- This is single patient use. Unused portions should be discarded and only new bottles may be used.
- Topical ophthalmic anesthetics should never be given to a patient for self-administration.
- During the period of anesthesia protect the patient's eyes from further injury. The patient will not be able to feel the introduction of new foreign bodies, chemicals, etc. **DO NOT** allow the patient to rub their eyes. Protect the eye from dust and other hazards.
- Occasional burning/stinging, lacrimation, and photophobia may occur upon initial instillation of drops. This is usually a transient side effect and occurs less often with proparacaine (must be kept refrigerated).

Vaccinations

Provider Level	1 ST Dose	Repeat Dose
EMT	NO	NO
EMT-IV	NO	NO
Paramedic	YES	YES

Hepatitis B Vaccine (recombinant)

- a. Description
 - The vaccines currently in use in the United States are made with recombinant DNA technology, and contain protein portions of HBV (usually parts of the outer protein or the surface antigen of HBV). Thus, the vaccines do not contain any live virus. More than 95% of children and adolescents and more than 90% of young, healthy adults develop adequate immunity following the recommended three doses. Persons who respond to the vaccine are protected from both acute hepatitis B infections as well as chronic infection.
- b. Indications
 - Pre–employment/employment related.
- c. Contraindications
 - Known hypersensitivity
- d. Dosage & Administration
 - **Adult:**
 - i. 1 mL mg IM, deltoid is the preferred site
 - ii. 3 doses will be required. 1st on the elected date, 2nd 1 month later, and 3rd 6 months from the first dose.
 - **Pediatric: NOT ALLOWED**

Influenza Virus Vaccine

- a. Description
 - Influenza Virus Vaccine is an inoculation of antigens prepared from inactivated influenza virus stimulating the production of specific antibodies. Protection is afforded only against those strains from which the vaccine is prepared or against closely related strains.
- b. Indications
 - Any person who, because of age, underlying medical condition, or in close contact with high–risk persons, is at increased risk for complications of influenza.
 - Persons who wish to reduce their risk of acquiring influenza.
- c. Contraindications
 - Known hypersensitivity or allergy to eggs or egg products.
- d. Dosage & Administration
 - **Adult:** 0.5 mg IM
 - **Pediatric:** Age <8 is **NOT ALLOWED**
- e. Special Considerations
 - Pregnant women **MUST** have a note from their Obstetrician.
 - Persons 8 to 12 years of age **MUST** have had the vaccine previously.
 - **DO NOT** administer influenza vaccine within 3 days of pertussis vaccine or combined diphtheria/tetanus/pertussis (DPT) vaccine.

Vaccinations

Tetnus-Diphtheria Vaccine

- a. Description
 - Td is a tetanus–diphtheria vaccine given to adolescents and adults as a booster shot every 10 years, or after an exposure to tetanus under some circumstances. This vaccine works by exposing you to a small dose of the bacteria or a protein from the bacteria, which causes the body to develop immunity to the disease.
- b. Indications
 - Pre–employment/employment related if lack of evidence of having received tetanus vaccine in the previous 10 years.
 - Recent deep and contaminated wound (e.g., contaminated with dirt, feces, saliva) and lack of evidence of having received tetanus toxoid–containing vaccine in the previous 5 years.
- c. Contraindications
 - Known hypersensitivity or allergy
 - Pregnancy
- d. Dosage & Administration
 - **Adult:** Age 18 and older, 0.5 mL IM, deltoid is the preferred site
 - **Pediatric: NOT ALLOWED**
- e. Special Considerations
 - A physician’s consultation is required if history of an unstable neurological condition or history of Guillain–Barré syndrome
 - Persons with moderate or severe illness on the day any vaccine is scheduled should probably be delayed until full recovery

General Considerations

- a. Pregnancy Category C
- b. At a physician’s discretion, either vaccine may be administered during the 2nd or 3rd trimester.
- c. Administered doses should be documented on a vaccination record and provided to the recipient as well as maintained in agency records. Documentation should include the manufacturer, lot number, expiration date, dose given, and site of injection. Recipient should read an information sheet and sign an authorization and consent form before administration.
- d. Vaccine should be refrigerated at 36–40 degrees F.
- e. Pain in arm at the injection site, fever, chills, headache, muscle aches and or allergic reaction may occur.
- f. In the event of a presumed allergic reaction such as hives, angioedema, allergic asthma, or systemic anaphylaxis contact 911 and follow guideline.

Vecuronium Bromide (Norcuron)

Waivered Medication		
Provider Level	1 st Dose	Repeat Dose
EMT	NO	NO
EMT-IV	NO	NO
Paramedic	NO	NO
RSI Paramedic	SO	NO

Description

- It is a short-to-intermediate acting skeletal muscle relaxant. It initiates flaccid paralysis by blocking receptors of the motor end plate, rather than binding to them. Effectively, this action blocks neuromuscular transmission of impulses without depolarizing the muscle.
- Due to the non-depolarizing nature of this drug, it has less adverse effects in relation to hyperkalemia and is also remarkably free of the traditional histaminic side effects that characterize most other non-depolarizing skeletal muscle relaxants.

Onset & Duration

- Onset: Flaccid paralysis within 2 to 3 minutes
- Duration: Up to 60 minutes

Indications

- Maintain paralysis in the intubated patient

Contraindications

- Known hypersensitivity

Adverse Reactions

- Patients with severe renal failure and/or hepatic failure may experience prolonged paralysis when given standard doses of the medication.
- There are few, if any, cardiovascular side effects with the administration of vecuronium.

Dosage & Administration

- Adult**: 10 mg bolus IV/IO
 - NOT** repeated
- Pediatric**: **NOT ALLOWED**

Special Considerations

- Pregnancy Category C
- If administering for post RSI maintenance, assure correctly placed endotracheal tube before this medication is administered
- It is important to remember that vecuronium has no ability to sedate or relieve pain, **SEDATION SHOULD BE ADMINISTERED.**

Haloperidol (Haldol)

Condition	CRT USE ONLY	
Provider Level	1 st Dose	Repeat Dose
EMT	NO	NO
EMT-IV	NO	NO
Paramedic	SO	SO

Description

- It blocks the effects of dopamine and increases its turnover rate; however, the precise mechanism of action is unknown.

Onset & Duration

- Onset: Within 5 minutes
- Duration: 4 to 6 hours

Indications

- CRT Use **ONLY**: Used for management of manifestations of psychotic disorders and for the treatment of agitated states in acute and chronic psychoses.

Contraindications

- Parkinson's disease
- Known hypersensitivity
- Hypotension

Adverse Reactions

- Constipation, dry mouth, salivary hypersecretion
- Tachycardia
- Extrapyramidal disorder, hyperkinesia, tremors, dystonia

Dosage & Administration

- Adult**: 5 to 10 mg IM
- Pediatric**: **NOT ALLOWED**

Special Considerations

- Pregnancy Class C
- Since QT-prolongation has been observed during HALDOL treatment, caution is advised when prescribing to a patient with QT-prolongation conditions (long QT-syndrome, hypokalemia, electrolyte imbalance) or to patients receiving medications known to prolong the QT-interval or known to cause electrolyte imbalance.

Approved Abbreviations

Introduction

- a. This is a list of approved abbreviations for prehospital provider use.

↓ = decreased or lower

≈ = approximately

≤ = less than or equal to

≥ = greater than or equal to

Δ = change

@ = at

∅ = no, none

μ = micro

μg = microgram

1° = primary exam

2° = secondary exam

ā = before

AAOx3 = Awake, Alert, Oriented person, place, time

ABC = airway, breathing, circulation

Abd = abdomen

AC = antecubital fossa

AICD = automated internal cardiac defibrillator

AKA = above knee amputation

ALS = Advanced Life Support

Amb = ambulatory

Ant = anterior

AOB = alcohol on breath

AMR = American Medical Response

A/P = anterior/posterior

APAP = acetaminophen

ASA = aspirin

AV = atrioventricular or arteriovenous

AVPU = alert, verbal, pain, unresponsive?

BKA = below knee amputation

BG = blood glucose

BGL = blood glucose level

Bilat = bilaterally

BLS = Basic Life Support

B/P = blood pressure

bpm = beats per minute

BVM = bag-valve-mask

c = with

C = Centigrade

cc = cubic centimeter

C2 = code 2 (non-emergent)

C3 = code 3 (emergent)

CA = cancer

CABG = coronary artery bypass graft

CaCl = calcium chloride

CAD = coronary artery disease

CAO = conscious, alert and oriented

CC = chief complaint

CCT = critical care transport

CHB = complete heart block

CHF = congestive heart failure

CHI = closed head injury

Clr = clear

cm = centimeter

CMS = circulation, movement, sensation

CNS = central nervous system

c/o = complains of

CO = carbon monoxide

CO₂ = carbon dioxide

COPD = chronic obstructive pulmonary disease

C/P = chest pain

CPR = cardiopulmonary resuscitation

CSF = cerebrospinal fluid

CSFD = Colorado Springs Fire Department

CSPD = Colorado Springs Fire Department

CSM = carotid sinus massage

CSP = Colorado State Patrol

C-spine = cervical spine

CT = computerized tomography (CAT scan)

CTL-Spine = cervical, thoracic, lumbar spine

CVA = cerebrovascular accident (stroke)

Cx = chest

D50 = dextrose 50%

D5W = dextrose 5% in water

Defib = defibrillation

Dig = Digoxin, Lanoxin

DKA = diabetic ketoacidosis

DOA = dead on arrival

Dx = diagnosis

ED = Emergency Department

ER = Emergency Room

ECG = electrocardiogram

EKG = electrocardiogram

EMS = Emergency Medical Services

ETT = endotracheal tube

ETA = estimated time of arrival

ETOH = beverage alcohol

Exp = expiration

F = Fahrenheit

Approved Abbreviations

FA = forearm
FBAO = foreign body airway obstruction
Fx = fracture
g = gauge (diameter)
GCS = Glasgow Coma Scale or Score
GERD = gastro-esophageal reflux disease
GI = gastrointestinal
G or Gm = gram
GSW = gunshot wound
gtts = drops
GYN = gynecological
GU = genitourinary
H = hour
HA = headache
HB = heart block (1, 2, 3 HB)
HEENT = head, ears, eyes, nose, throat
HI = head injury
Hosp = Hospital
H/P = history and physical
HR = heart rate
HTN = hypertension
Hx = history
ICP = intracranial pressure
ICS = intercostal space
ICU = Intensive care unit
IM = intramuscular
IO = intraosseous
IV = intravenous
IVP = intravenous push
J = Joule
JVD = jugular venous distention
KCl = potassium chloride
Kg = kilogram
L = left
l = liter
lb = pound
LAD = left axis deviation or left anterior descending
LAH = left anterior hemiblock
LBB = left bundle branch block
LGL = Lown-Ganong-Levine Syndrome
LLQ = left lower quadrant
lpm = liters per minute
LMP = last menstrual period
LR = lactated ringer
LS = lung sounds
LSB = long spine board
LOC = loss of consciousness
LPH = left posterior hemiblock
LUQ = left upper quadrant

I001 Revised: 11/14/2018

mA = milliamps
MOE = movement of extremity
MCA = motorcycle accident
MCL = mid-clavicular line
mcg = microgram
meds = medications
mEq = milli-equivalent
mg = milligram
mg/dL = milligrams per deciliter
MgSO₄ = Magnesium Sulfate
MI = myocardial infarction
min = minute
ml = milliliter
mmHG = millimeters of mercury
MOI = mechanism of injury
MRI = magnetic resonance imaging
MVA = motor vehicle accident
NaHCO₃ = Sodium Bicarbonate
NAD = no acute distress
NARD = no apparent respiratory distress
NATO = not able to obtain
NC = nasal cannula
NP = nasopharyngeal
NEB = nebulizer
NG tube = nasogastric tube
NKDA = no known drug allergies
NL = non labored
NPA = nasal pharyngeal airway
NPO = nothing by mouth
NRB = non re-breather mask
NS = normal saline
NSR = normal sinus rhythm
NTG = nitroglycerin
N/V = nausea/vomiting
N/V/D = nausea/vomiting/diarrhea
O₂ = oxygen
OB = obstetrical
Occ = occipital
OD = overdose
OM = otitis media
OP = oropharyngeal
OPA = oral pharyngeal airway
OPIM = Other Potential Infectious Material
oz = ounce
p = after
PA = physician advisor
PAC = premature atrial contraction
Palp = palpation
PE = pulmonary embolus

Approved Abbreviations

PEA = pulseless electrical activity
PG = pregnant
P#/G# = para # / gravida # (P1G1)
PJC = premature junctional contraction
PMS = pulse, movement, sensation
PN = pneumonia
PO = by mouth
POP = pain on palpation
Post = posterior
PR = per rectum; rectally
PRI = P-R interval relating to ECG
PRN = as needed
PSI = pounds per square inch
PSVT = paroxysmal supraventricular tachycardia
Pt = patient
PTA = Prior to arrival
PTSD = post traumatic stress disorder
PVC = premature ventricular contraction
Px = pain
q = every
R = right
RAD = right axis deviation
Rad = radial pulse
RBB = right bundle branch block
RCA = right circumflex artery
Resp = respiration
RL = ringer's lactate
RLQ = right lower quadrant
RR = respiratory rate
RSI = rapid sequence induction or intubation
RUQ = right upper quadrant
Rx = prescribed for
s/p = status post
s/s = signs and symptoms
SaO2 = oxygen saturation
sec = second
SL = sublingual
SMOE = sensory, movement of extremity
SOB = shortness of breath
SQ = subcutaneous
ST = S-T segment relative to ECG
Sux - Succinylcholine
synch = synchronous (switch on defibrillator)
Sz = seizure
TA = traffic accident
TB = tuberculosis
TCA = tricyclic antidepressant
TCP = transcutaneous pacemaker
Temp = temperature

TIA = transient ischemic attack
TKO = to keep open (minimum IV rate)
Trans = transport
Tx = treatment
U/A = upon arrival
UGI = upper gastrointestinal
URI = upper respiratory infection
UTI = urinary tract infection
V = volt
VF = ventricular fibrillation
V. Fib. = ventricular fibrillation
VT = ventricular tachycardia
V. Tach. = ventricular tachycardia
VS = vital signs
WNL = within normal limits
W/O = without
W/D/G = warm, dry, good skin
WPW = Wolff-Parkinson-White syndrome